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An index to the 107th volume of THE RAILWAY GAZETTE *covering the issues from July 5 to December 27, 1957, has been prepared, and is now available free of charge on application to the publisher.*

Ill-Advised Threat or Strike Action

DISPUTES in the nationalised transport undertakings over claims for increased wages have become a regrettable feature of the early part of the year. The present threat of a strike by London busmen in pursuance of their claim, as recorded on another page, with, it is reported, the backing of the N.U.R. in the London area, is as ill-advised as are most of these attempts to exert pressure to obtain higher pay. The N.U.R. backing would be mainly from London Transport Underground employees. One would have thought that the financial situation of the nationalised transport undertakings, including London Transport, was too well known for anybody connected with them seriously to imagine that wage increases were feasible. The arguments against them were clearly put by Mr. A. B. B. Valentine, Member of the British Transport Commission, in his evidence last week before the Railway Staff National Tribunal when opposing the three unions' claims. The leap-frogging of wage demands and rises in prices must be stopped if the inflationary trend is to be kept in check. Apart from the national welfare, workers in the transport industries should remember that increases in transport could result in rises in the cost of living which must stultify any additions to rates of pay. It is better surely to accept a lower rate than to press for an increase which, by adding to the prices of consumer goods, results in lower real wages. In the case of London Transport, moreover, the Minister of Transport & Civil Aviation, Mr. Harold Watkinson, has ruled that fares must not be raised to find the money for a wage increase. The only possible steps include curtailing services; that must result not only in reduced overtime, but also, eventually, in considerable unemployment. Strike action would benefit nobody. Apart from its effects on commerce and industry in London, it would alienate many people and result in further private motoring, with its unfavourable effects on bus operation in the streets and possible curtailment of L.T.E. services. Now that transport workers are known to be reasonably well paid, there is less public sympathy for them than previously; it would be lost if a strike took place. It is not too late for London busmen to take the more statesmanlike course of co-operating in the efforts now being made to keep prices stable and so maintain real wages at a reasonable level. Employees of British Railways and of London Transport would do well to bear in mind that they no longer provide or offer their own services in a seller's market.

British Electrical Equipment for Estoril Railway

SINCE 1950 the electrified Estoril Railway, Portugal, has been introducing new rolling stock and strengthening its power supply arrangements to meet the rapidly developing passenger transport requirements of the area it serves between Lisbon, Estoril, and Cascais. In placing new orders last week for three new four-coach trains and four additional trailers, the railway has again accepted the tender of the General Electric Co. Ltd. for the electrical equipment, although the rolling stock is to be built in Portugal by Sociedades Reunidas de Fabricaçoes Metálicas Lda. The electrical portion of the contract was gained for this country in the face of competition described as some of the keenest since the war, notably from German, Swiss, and Italian manufacturers; this is a sign of the stiffening of the competitive situation on the Continent, for the previous two orders for all-British rolling stock were placed by the railway with the G.E.C. as main contractor. At present, train formations consist mainly of three or six coaches, with a motor coach at one or both ends. It is likely that in the new trains the motor coach will be marshalled as the second vehicle from one end of the four-coach formation, as is done in the 32 four-coach sets equipped by the G.E.C. for the Liverpool Street-Southend service of the Eastern Region of British Railways.

Institute of Transport President-Elect

NO better choice, or one more popular in the world of transport, could have been made as President of the Institute of Transport than that of Major-General G. N. Russell, General Manager & Chairman of the Board of Management, British Road Services, and member of the Eastern Area Board. His election to this office for the year 1958-59 was announced by Sir Reginald Wilson, President for the current year, at the Institute dinner last Friday. Major-General Russell has had long experience of transport both as provider and user. His responsibility over the past 10 years for the efficiency and prosperity of the nationalised road haulage undertaking has been marked by success in circumstances of

particular difficulty. He has shown courage, skill, and leadership in maintaining the morale and efficiency of B.R.S. during the discouraging period when, in implementation of the Transport Act of 1953, that undertaking had to be reduced in size and scope so soon after it had begun to show signs of efficiency in increased net traffic receipts. Before assuming charge of British Road Services, he had varied experience, as a senior military officer, of providing and using railway and other transport on a large scale. He can be relied on to display the same outstanding qualities as President of the Institute of Transport as he has shown in his other activities.

Overseas Railway Traffics

RAILWAY receipts of South African Railways & Harbours in the week ended January 18, were £2,747,311 compared with £2,645,362 in the corresponding week of 1957. Receipts in general continued to rise above the previous year's figures in the following weeks, and at February 22, aggregate receipts from April 1, 1957, were £130,388,440 compared with £125,001,125 in the corresponding period of 1956-57. Harbour and airway receipts also showed a considerable improvement on the previous year's figures with Airways aggregate receipts from April 1, 1957, some £1,500,000 up on the corresponding figures for 1956-57. At March 7, aggregate receipts of the Paraguay Central Railway from July 1, 1957, were G65,190,769 compared with G67,022,391 for the corresponding period of 1956-57, a decrease of G1,831,622, but this figure was some G2,000,000 better than at February 7, four weeks earlier. This improvement is almost entirely due to record dispatches of sugar which, in the week ended February 14, accounted for G1,508,000 of the G2,859,877 receipts. Costa Rica Railway receipts for February were colones 1,910,126 compared with colones 1,619,442 for February, 1957, an increase of colones 209,684. Aggregate receipts from July 1, 1957, amounted to colones 14,516,646 (colones 12,564,429).

Crewe Pupils' Annual Dinner Revived

AFTER a break of five years, the Crewe Pupils' & Apprentices' Association held its 51st annual dinner on March 21, at the Royal Automobile Club, London, when 41 members and guests were present. Originally there were two grades of trainees at Crewe: Pupils and Premium Apprentices. In 1932, when Sir William Stanier was Chief Mechanical Engineer, L.M.S.R., the premium apprenticeship was abolished and Crewe Engineering Apprentices were introduced. The Pupils' Dinner was first held in 1889 or 1890 at Crewe. Since then, apart from wartime breaks, it has been held annually, usually in London, although in 1953 it was again held at Crewe to mark the opening of the new Apprentice School. The Association hopes that the dinner will again become an annual function. Mr. F. S. Bennett, who was a pupil from 1892 to 1897, and is probably the oldest surviving member of the Asssociation, presided at the recent dinner, and proposed the toast to "The Guests" to which Mr. R. C. Bond, Chief Mechanical Engineer, British Railways Central Staff, B.T.C., responded. The names of those present appear elsewhere in this issue.

Kings Cross—Sheffield by Pullman

THE operation from next autumn on the Great Northern Line of the Eastern Region of all-Pullman expresses between Kings Cross and Sheffield Victoria via Retford, is a further vigorous effort to create passenger traffic. The only previous all-Pullman service between these two points was the short-lived venture of the L.N.E.R. in 1925, when, for some months, such a train ran to and from Manchester via Retford and Sheffield. The new service will be remarkable in several ways. One train set will make two return trips daily, starting with a departure from Sheffield soon after 7 a.m., affording intensive user of the stock. Existing Pullman cars will be used for the time being, but these will be replaced as new cars become available. The trains will be hauled, it is understood, by a 2,000-h.p. diesel locomotive, which will perform the four runs daily. The journey times will be something over 2¼ hr.; the fastest hitherto between London and Sheffield has been 2 hr. 50 min., some 50 years ago. The several trains will make one or two intermediate stops, including, in one case, a Grantham stop for a Lincoln connection. Besides growing business traffic, slow running south of Sheffield on both the former Great Central and Midland routes, because of colliery subsidences, has resulted in a decision to provide a fast service via Retford.

B.T.C. Hotels & Catering Services

BECAUSE food and drink are essential to all and give pleasure to many, discussion on any form of catering is bound to incur argument. And, because music-hall myths die hard and the station bath-bun was once a favourite target for wit, the Hotels & Catering Division of the British Transport Commission comes under its fair share of fire. When this happens, both defenders and attackers frequently are not fully informed as to the extent of the services available (an illustrated description of these is given on pages 366-368 of this issue). As a step toward improving this situation an exhibition stand, designed and built by the division and intended for display throughout Britain, was installed at the recent "*Daily Herald* Holiday & Travel Exhibition" in Manchester. On this stand was a display of food and alcoholic and soft drinks and a kind of peep-show. This was formed by full-colour transparencies, lighted from below. These illustrated many of the attractive premises owned by the division. An excellent service not yet completely developed is contained in the packed meal facilities on offer. That these are not fully exploited may result from staffing difficulties and shortage of suitable accommodation—matters into which the British Transport Commission might do well to inquire. This market could prove increasingly valuable with the passage of time.

Isle of Man Railway Company in 1957

DESPITE adverse weather during the summer months of 1957 which affected passenger receipts, an increase in total receipts of £144 over those of the preceding year was announced by Mr. A. C. Teare, Chairman of the Isle of Man Railway, at the annual general meeting on March 12. This is a remarkable achievement for a 3-ft. gauge steam-worked line in the British Isles. It is accounted for by an increase in goods traffic which offset decreases in other items. Passenger receipts amounted to £63,202 and total receipts were £86,600. Competition between holiday resorts at home and abroad is becoming keener year by year, and the I.M.R., as Mr. Teare has pointed out, will have to exert all its energies to obtain passenger traffic from the reduced amount of potential that may find its way to the island. It must be remembered that most visitors stay in Douglas and use the railway for excursions. The increase in working expenses, by £19 to £79,584, was surprisingly small in view of wage increases during the year; that this was not greater says much for the efficiency of the management.

Sliding-Roof Sliding-Side Wagons

IN the design of new wagon types certain trends are coming to be more noticeable, in particular, efforts to combine a certain specialisation with a wide range of wagon-user. Apart from a certain concentration on wagons for the iron, steel and mining industries and traffics, such as the new British Railways ore wagons, one can say that on a wider basis there have been many endeavours: (1) to mechanise loading and unloading of goods wagons in order to reduce more and more the manual handling of the goods; (2) to increase wagon mileage by making loading and unloading easier and faster; (3) to create a multi-purpose vehicle, even if it is special wagon, so that railways have not to deal with a great number of various types; and (4) to build any such special multi-purpose wagons in carefully-planned series, so that it is possible to let proved

special wagons become standard wagons. One of the most widely-used types meeting this general specification, additional to any particular local requirements are the SEAG sliding-roof and sliding-side wagons, some brief particulars of whose economics in loading and unloading times are given on page 363.

Special Wagon Demonstration

A UNIQUE demonstration of modern freight wagons, with particular reference to loading and unloading, was staged at Siegen on March 20-22 before over 200 railwaymen and industrialists from 17 different countries, including the U.S.A. The demonstrations were supplemented by lectures on new trends in freight-traffic handling. The meeting as a whole was organised by SEAG, and the many types of wagons shown were all of that company's build. They included not only the well-known sliding-roof and sliding-side wagons, of which some 5,000 are now running in various European countries, but also the Hamborn tipper, the new lift-dump wagon of unusual proportions, side-discharge wagons, and road-rail transporters. Demonstrations were made with container and piggy-back handling, and also of television spotting and remote-control unloading of high-capacity mineral wagons. Particular attention was paid to the use of hydraulic power in the operation of unloading facilities, and also to the potentialities of small-dia. wheels (24-25 in.) for a variety of rolling stock. Co-ordination of road-rail transport in relation to vehicles and loading and unloading procedures, and the need of making more or less special wagons suitable also for general freight traffic, were two matters emphasised; and one of the most attractive exhibits was the SEAG Bi-trac shunting and loading tractor, capable of running on road or rail, of acting as a fork-lift truck on either, and of moving up to 100 tons of wagons.

The First West End Terminus in London

BY 1857, street traffic congestion in the approaches to London Bridge Station had reached alarming proportions. In that year more than 13½ million passengers passed through the station, some 6,000,000 on the Brighton side and 7,500,000 on the South Eastern. The West End of London was developing rapidly, much of it on land which had been drained, its level raised, and attractively laid out by Thomas Cubitt. The need for a West End terminus was first met 100 years ago by the opening on March 29 (in time for the Easter traffic) of the so-called Pimlico terminus, actually in Battersea, of which a scarce illustration is reproduced in our Scrap Heap columns. It was owned by an independent company, the West End of London & Crystal Palace Railway, but came under the *ægis* of the L.B.S.C.R., which in 1859 acquired it. By this time an extension across the Thames to what became Victoria Station was already planned, and Pimlico had the shortest life as a main-line terminus of any London station, only 2½ years, as Victoria was opened on October 1, 1860. Despite earlier intentions, no railway other than the L.B.S.C.R. ever used the Pimlico terminus, although its approach lines afterwards enabled G.W.R. and L.N.W.R. trains to reach Victoria.

The Late Colonel G. R. S. Wilson

SOME time before much use was made of certain refinements now so familiar in railway operation, such as track circuiting and power signalling, travellers by train in the British Isles could congratulate themselves on being conveyed with very little risk. This result had been achieved with the minimum of official control over technical details, left as they still are to the judgment of the engineers concerned. The supervision exercised under the relatively few but reasonably well-drawn Acts of Parliament affecting the safety of passengers and railway servants lies in the hands of the Inspecting Officers and Railway Employment Inspectors of the Ministry of Transport & Civil Aviation. At their head since August, 1949, has been Lt.-Colonel G. R. S. Wilson who, as recorded elsewhere in this issue, has died at a relatively early age, deply regretted by a wide circle here and in other countries. His membership of the International Railway Congress Association, in the discussions of which he often took part, and his many journeys overseas brought him into contact with leading railway personalities abroad who came to feel a great regard for him and not infrequently sought his advice, invariably freely given. His considerable experience had convinced him, as it had his two predecessors in office, that the United Kingdom had followed a wise course in these matters, justified by events, and that nothing of appreciable value would be gained by the public or railway servants were something more elaborate to replace it.

He gave expression to this view in his Cantor Lecture to the Royal Society of Arts in 1954 and again a few months ago when addressing the Railway Students' Association. Among the accident inquiries he conducted were some presenting points of great interest, or which were of special significance because of the recommendations he subsequently made. These include the inquiries following the derailments at Doncaster, Weedon, Watford, Peterborough, and Sutton Coldfield, the collisions at Penmaenmawr, Harrow, Barnes, and Welwyn Garden City, and, more recently, at St. Johns, the report on which he has not lived to complete. Others of special consequence investigated by his colleagues include the derailments at Bethnal Green, Thirsk, and Didcot, and the Wicks Lane crossing accident. These involved close consultation with himself as chief adviser to the Minister on such matters. Such work, important though it be, was far from being the only task occupying the attention of himself and his staff. Inspection of railway layouts and modifications of them and study of plans of proposed works is always in progress, together with consultation with railway authorities on the application of official requirements. Colonel Wilson often expressed his appreciation of the whole-hearted co-operation afforded him by those authorities, who in turn were grateful for his unfailing consideration and understanding of their own difficulties and problems.

When conducting an inquiry he would so frame his questions to witnesses as to clarify his point to the utmost to hearers not necessarily having the advantage of his qualifications and experience, and, while not disguising his feelings in the face of actual negligence and carelessness, always manifested an encouraging sympathy towards anyone unfortunate enough to have to acknowledge a mistake, fraught perhaps with grave consequences. His conclusions on a case were expressed always without reserve after anxious consideration of every point involved, down to the smallest, in single-minded devotion to the public interest, in serving which he never spared himself. When he felt that the circumstances justified it he would, as he did in the instances of the Harrow and St. Johns investigations, make a preliminary announcement on matters on which public anxiety was being expressed.

His appointment as Chief Inspecting Officer came 20 months after nationalisation, and he therefore at once became concerned with the proposals to develop a form of warning automatic train control applicable throughout the country. He was responsible to the Minister for following all the stages of the work, the trials with the equipment and the modifications made in the light of experience and, finally, for recommending the adoption of the apparatus illustrated recently in our pages, now to be applied on an extended scale. The protection of level crossings also was a subject claiming his close attention in an endeavour not only to increase the level of safety, but also to reduce the very heavy financial burden resulting from statutory obligations dating from a century ago, some relief from which has now been obtained. Those who for any reason required verification of facts relating to legislative or other aspects of railway history, found Colonel Wilson ever ready to place the information in the Ministry's archives at their disposal and to do everything possible to assist them in their researches. There must be not a few who will be ever grateful for numerous kindnesses received at his hands, in this and in many ways.

Motive Power Policy for Rhodesia

DURING 1956 instructions were received by Messrs. Freeman, Fox & Partners, and Messrs. Merz & McLellan, to advise the Rhodesia Railways on future motive power policy. On the basis of traffic estimates prepared by the railways, they were to advise whether (*a*) the motive power should continue to be based predominantly on steam; or (*b*) whether the stage in development had been reached where some other form of traction should be introduced, or the use of diesel traction extended. The recommendations of the report concerning electrification were referred to in our January 17 issue, but the complete document, of which we have now received a copy from Lt.-Colonel H. B. Everard, General Manager of Rhodesia Railways, deals also with diesel and steam traction throughout the Rhodesia Railways system.

The background is one of traffic increasing at an average rate of about 6·6 per cent a year, and growing two-and-a-half times between 1955 and 1970. The studies have been based on the whole of the traffic being handled over the existing routes, for no justification has been found for building the Sinoia cut-off (giving a direct link between Salisbury and Kafue) in the near future, or until there is some very substantial change in circumstances. It is pointed out in this connection that electrification of any section between Kafue and Salisbury would tend to postpone the need to construct the cut-off, not only by improving line capacity but also by reducing operating costs over the present route. The Salisbury-Bulawayo section is, in fact, recommended for electrification.

The recommendations are based on economic and engineering statistics covering the whole system in eight sections. All economic comparisons bearing on electrification assume the use of the 50-cycle a.c. system. The report states that technical development of the standard-frequency system, though still proceeding, is now sufficiently established for it to be recommended with confidence for Rhodesian main-line conditions; and the studies have shown that it would be cheaper than d.c. It is found that there is a case for electrification from Nkana to Kafue (270 miles), to be followed by electrification from Salisbury to Bulawayo (303 miles). On the assumption that instructions to proceed with these undertakings were to be given at the end of 1957, the report suggests that electrification from Nkana to Broken Hill could be commissioned in 1961, and from Broken Hill to Kafue in 1962. The scheme in fact has been postponed as an economy measure. The economies to be achieved by implementing the recommendations of the report are so great that electrification work presumably will be put in hand as soon as sufficient funds for construction are forthcoming.

Steam is shown in the report to be the most costly form of traction on this route. Electric operation would involve some £5,500,000 additional capital expenditure compared with diesel; but after 1962 the saving in operating costs as compared with diesel working would suffice to provide 5 per cent interest on the additional capital and the necessary depreciation allowance, plus a net return increasing from 1·4 per cent in 1962 to 8·7 per cent in 1970. The figures for diesel operation show very much smaller savings compared with steam, but if it were not possible to adopt electrification, diesel operation definitely would be preferable to continued steam working.

On the Bulawayo-Salisbury section the annual savings on operating costs arising from a change of motive power are some £100,000 lower than for Nkana-Kafue. Even though the savings are smaller, however, and the extra capital investment rather higher, there is stated to be a potentially good case for electric operation, in that the net return by 1970 is nearly 6 per cent. There is, on the other hand, no economic justification for diesel traction, because the ratio of the price of coal to that of oil is lower here than on the Nkana-Kafue section, and also because the specific consumption of both oil and coal, but particularly coal, are lower on the easier gradients. Provisional dates suggested for this electrification are 1964 for Salisbury-Gwelo, and 1965 for Gwelo-Bulawayo. On this route, however, the advantage of electrification depends much on the level of traffic, in which the prospect of export coal passing from Bulawayo to Somabula, on its way to Malvernia and thence to Lourenço Marques, is an important factor. Should this traffic fail to materialise, a delay of two years in commissioning this electrification might be advantageous so as to allow time for the growth of other traffic.

Diesel operation is already adopted on the Salisbury-Umtali line and is about to be introduced on the South-East connection (Somabula-Malvernia). The report concurs with both these decisions and considers that even in the absence of export coal traffic, diesel traction should be adopted on the latter route although in those circumstances it would be less imperative. Diesel operation of the various branch lines should, it is considered, be an ultimate objective, but the remaining parts of the railway should continue to be steam-operated at least for the time being.

Steam-worked main lines, therefore, would be Kafue - Thomson Junction - Bulawayo, and Bulawayo - Vryburg. By 1966 the former would use existing "20th" and "16th" class Beyer-Garratts for goods and "15th" class for passenger trains. For Bulawayo-Vryburg it is proposed that "15th" class Garratts should be used as well as the "19th" class 4-8-2 condensing locomotives already used, and this would involve curve strengthening, modification of locomotive sheds, and special arrangements for water supply.

It is also recommended that for the time being "14th" class Garratts should share branch line work with new diesels which will have to be purchased for these duties. The "12th" class locomotives and others released from main and branch line duties would become available for shunting and ballast trains, unless large-scale diesel-electric shunting were adopted, which would have to be the subject of a separate study. The whole report is characterised by careful attention to methods of making the best use of motive power resources of all types in the interests of the railways, without bias towards any particular form of traction.

Capital and operating costs with diesel and electric traction on the Nkana-Kafue, and Bulawayo-Salisbury sections are compared with the corresponding figures for steam working as below:—

—	1962		1966		1970	
	Diesel	Electric	Diesel	Electric	Diesel	Electric
Nkana—Kafue						
Capital (£000)	− 491	+5,584	− 805	+5,054	−1,189	+4,265
Annual operating costs (£000)	− 31	− 485	− 17	− 633	− 8	− 804
Total annual costs (£000)	− 54	− 141	− 59	− 324	− 71	− 544
Net return (percentage of savings to extra investment)	2·5		6·4		12·8	
Bulawayo—Salisbury						
Capital (£000)	− 258	+6,057	− 114	+5,778	− 291	+5,355
Annual operating costs (£000)	+ 66	− 413	+ 121	− 533	+ 115	− 641
Total operating costs (£000)	+ 58	− 40	+ 126	− 177	+ 109	− 312
Net return (percentage of savings to extra investment)	0·7		3·1		5·8	

NOTE: Figures show increase (+) or reduction (−) in capital and annual costs compared with steam operation

Facts to be Faced

TWO main points emerge from the information given last week by Mr. A. B. B. Valentine, Member of the British Transport Commission, in his evidence given last week to the Railway Staff National Tribunal, before which he was opposing, on behalf of the Commission, the claims of the three railway trades unions for higher pay. His remarks are summarised on another page.

First, the deficit for the Commission for 1957, as he has explained, will prove to have been some millions higher than was implied in the White Paper of 1956 "Proposals for the Railways" which indicated the amounts which the Commission could borrow to tide it over the period before it could once more pay its way. The Commission has already had to ask the Area Boards to re-examine their revenue budgets and reduce planned expenditure on revenue account for 1958. To keep in line with the White Paper estimates, it has had to set a target for British Railways which involves reductions of some millions of pounds in the amount of working expenses contemplated. Expenditure on maintenance and repair will have to be curtailed or deferred, and in all departments at every practicable point manpower will have to be reduced. These curtailments do not include implementation of the modernisation plan, already slowed down by financial stringency. Some curtailments of services may be inevitable. This comes as no surprise, in view of the traffic receipts for some months past. On the other hand, the deficit for 1957 of over £54,000,000, can be made good by an increase of something less than 10 per cent in the total traffic receipts of the Commission, of which some three-quarters are derived from British Railways. Much can still be done by improving services and by making vigorous efforts to price and to sell transport, and especially freight transport.

Second, the Commission now disavows special difficulties in obtaining labour. British Railways, according to Mr. Valentine, are feeling rather less than other employers the difficulties in recruiting and retaining staff common in a period of full employment. His statement shows how much the situation has changed in recent months, and it may change further, if services have to be curtailed. Largely because of the application of work study and of the use of mechanical equipment, the demand for labour, notably in the civil engineering departments, has been decreasing for some time, though there are local shortages where other employment competes. If the shortage is indeed less acute, now is the time to devote special attention both to recruitment and to training, especially of the young entry. To neglect what seems to be a good opportunity of building up a sound, permanent staff would be false economy.

Suggested Modernisation in New South Wales

THE concern known as Ebasco Services Inc. has been spending about a year in New South Wales collecting information to enable it to make recommendations to the Government Railways administration upon modernisation of that system. How far those recommendations will be accepted and acted upon by the administration is not yet known, but they are prominently discussed in the local technical press. Actually there is nothing very revolutionary in them, and it is the old story of economies promised as a result of the expenditure of large capital sums.

Briefly, the corporation advises a five-year programme as part of longer-term recommendations. For instance eventual full dieselisation is estimated to cost £A.35,110,000, but only £A.15,000,000 might be spent in the first five years. Details of the £15,000,000 are not available, but the £35,110,000 figure is expected to cover the purchase of 185 main line 1,800-h.p.; 140 branch line 900-h.p.; and 40 400-h.p. shunting units, these 365 units costing £A.30,710,000. The remainder of the £A.35,110,000 would be available for maintenance facilities and spares. An annual saving in operating expenditure is expected to be some £A.4,500,000 on completion. Incidentally, the corporation suggests the rebuilding of the "40" class diesel-electric locomotives at present in service, with new six-wheel bogies each having three instead of the two motors fitted today. The two-motor bogies could then be used for future 900-h.p. units.

Other purchases of rolling stock envisaged are 3,000 bogie (and mainly covered) wagons immediately, at a cost of £A.3,000,000, and, as the five-year figure is given as £A.15,000,000, it evidently recommends 15,000 during that period. An 8 per cent return upon this investment is estimated. The expenditure of £A.1,600 000 on coaching stock is also advised, and £A.4,400,000 on railcars, though, in the opinion of the corporation, there are limits to the usefulness of this form of transport in New South Wales.

In other spheres, measures recommended are new and all-gravity marshalling yards, further extension of electrification, new and extended workshops, mechanical aids to permanent-way maintenance and the strengthening of track and structures, C.T.C. and improved methods of signalling and mechanical accounting. In fact, Ebasco Services, Inc. in its estimate of expenditure in the five-year programme suggests the following:—

	£A. millions
Dieselisation	15·00
Wagons	15·00
Coaching stock	1·60
Railcars	4·40
Workshops	3·00
Marshalling yards	5·50
Permanent way	4·00
Electrification	3·50
Signalling, etc.	3·50
Other works	2·00
Works already in hand or projected	10·25
Total	67·75

The saving in operating costs resulting from this expenditure is expected to be £A.9·50 million annually.

Additionally, improved methods of operation and commercial activities are recommended. Considerably longer trains are advocated and also better use of stock. Ebasco does not advise the Railways administration to compete directly with road transport by entering the highway field, but recommends "traffic solicitation" by the appointment of commercial officers to seek business at strategic points, and advise the public on railway facilities available.

Southern Region Summer Passenger Timetable

AS so often the first Regional passenger timetable book to appear, that of the Southern Region, operative from June 19 to September 14, has now been published. Due to the further extension of the principle of printing Saturday train services separately from those from Monday to Friday in each week, the new Southern book contains no fewer than 936 pages. There are some very substantial improvements of service.

Receipt of further diesel-electric train sets will now make it possible to turn over the Charing Cross-Tunbridge Wells-Hastings service entirely to diesel operation; moreover the new buffet cars will make their appearance, and 12 trains each way daily will be so equipped. Existing gaps in the hourly service will be filled in, and there will be a train from Charing Cross to Hastings at every hr. from 8.20 a.m. to 11.20 p.m., the only slight variations in starting time being at 5.25 and 6.28 p.m.; to these will be added the 5.5, 5.14, 5.39 and 6.5 p.m. from Cannon Street. The 5.5 and 6.5 will both be 90 min. trains (the 5.5 p.m. service is entirely new), and the only ones not calling at Tonbridge; the remainder almost all will take 95 min. overall. All down trains except the 5.5 to 6.5 p.m. group will call at Waterloo, Sevenoaks, Tonbridge, Tunbridge Wells, and stations from Crowhurst to Hastings, detaching at Tunbridge Wells a through portion for all intermediate stations beyond. All fast portions will have diesel connections from Crowhurst to Bexhill West, which also will be reached in 95 min. from Charing Cross.

In the up direction, after the 6.12 and 7.15 a.m. from Hastings to Charing Cross and the 7.8, 7.30, 7.45 and 8.20 a.m. to Cannon Street, there will be hourly departures at 20 min. past the hr. from 9.20 a.m. to 10.20 p.m., with the 3.28 and 4.28 p.m. as the only exceptions, and an additional service at 2.50 p.m. The 90-min. trains to Cannon Street will be the 7.45 and 8.20 a.m., the former as now the only

train which does not call at Tunbridge Wells. There will be diesel departures from Bexhill West at the same time as from Hastings, to connect at Crowhurst. The most substantial improvement will be in the down late evening service; hitherto the last down evening train except on Wednesdays and Saturdays, has been the 7.20 p.m., now to be supplemented by trains at 8.20, 9.20 and 10.20 p.m.

Most of the workings between Hastings, Rye, and Ashford will be diesel-electric; there will be hourly trains from Hastings at 38 min. past the hr. from 7.38 a.m. to 9.38 p.m., with certain slight variations and additional trains at 6.15, 6.45, 7.20 and 8.3 a.m. and at 5.10 p.m., and similarly in the reverse direction.

There are to be some material improvements in the Central Division services also. Of these the principal will be the new trains at 2 and 36 min. past each hr. throughout the day, calling at East Croydon, Redhill and the new Gatwick Airport station to Three Bridges, from which they will continue as the previous all-stations trains to Horsham, Arundel, Littlehampton, and Bognor Regis. The trains at 2 min. past the hr. will connect at East Croydon with the semi-fast trains, brought into operation last year, which leave London Bridge at the even hours for East Croydon, Horley, Three Bridges, Haywards Heath, and Brighton. Every hour, therefore, there will be eight trains from Victoria and two from London Bridge, nine using the main line as far as Three Bridges and the remaining one travelling via Sutton to the mid-Sussex line. A similar service will operate in the reverse direction.

During the rush hours, the overcrowded 7.40 a.m. from Brighton to Victoria is to start at 7.37 a.m., and to be relieved by a new 7.40 a.m., which will run to London Bridge, arriving at 8.44 a.m., calling at Haywards Heath, Three Bridges, Horley and East Croydon. There will be a new train from Littlehampton at 7.21 a.m., calling at principal stations to Hove and then at Preston Park, Hassocks, Burgess Hill, Haywards Heath and East Croydon to London Bridge, arriving at 9.10 a.m., which equally will relieve the 8.6 a.m. from Brighton to Victoria. The 8.2 a.m. from Seaford to London Bridge, previously attached at Haywards Heath to the 8.4 a.m. from Eastbourne, will start at 7.59 a.m. and run independently to Victoria, arriving at 9.27 a.m. In the down direction the Littlehampton and Brighton portions of the 6.5 p.m. from London Bridge are to run independently, the former at 6.4 p.m., first stop Hove, and the latter at 6.7 p.m. for Haywards Heath, Burgess Hill, Hassocks, Preston Park, and Brighton. There will be an additional train from Victoria at 6.35 p.m. for Horley, Three Bridges, Haywards Heath, and Brighton. An hourly steam service is to operate in each direction between Horsham and Brighton via Steyning, at 19 min. past the hr. from Horsham and at 30 min. past from Brighton.

In the Western Division the summer 2.30 p.m. from Waterloo to Bournemouth is to become a 2-hr. train to Bournemouth Central (10 min. acceleration), to be a restaurant car train daily and to be extended to Weymouth, arriving at 5.38 p.m., replacing the previous Weymouth working off the 1.30 p.m. down, and accelerating the Weymouth service by 55 min. Developments on Sundays include a new 6.30 p.m. restaurant car train from Exeter to Waterloo, calling at principal stations and arriving at 10.21 p.m.

LETTERS TO THE EDITOR

(*The Editor is not responsible for opinions of correspondents*)

Motive Power Economics

March 10

SIR,—It has been suggested on many occasions that large savings of coal can be made by using straight electric in place of steam locomotives. Recent figures from the U.S.A. show that the reverse is the case. For each dollar spent on fuel in 1956, coal-fired steam locomotives moved 3,087 gross ton-miles compared with 2,959 for electric locomotives.

Steam results actually are much better than this, because both electric and diesel locomotives, which moved most of the traffic in the U.S.A. in 1956, are mostly used on the busiest and best graded routes where they can achieve the maximum mileage to justify their huge capital costs. This has forced the lighter, obsolete steam power to operate on heavily-graded branch lines where conditions certainly are not conducive to good fuel economy.

Tests on the New York Central System proved steam locomotives to be more economical than both electric and diesel. The Norfolk & Western Railway scrapped electrification in favour of steam locomotives, and its figures of almost 80,000 gross ton-miles per freight train-hr. and a transportation ratio of 29·39 per cent. are just about the best in the business. Here is a practically all-steam railway, using engine designs over 20 years old and operating in difficult conditions, making money while many diesel-worked railways operating in ideal conditions are losing money. Why, then, are railways all over the world following the lead of the failures, and ignoring the excellent results being achieved by the steam locomotives of the Norfolk & Western? The Australian railways have adopted diesel traction in a big way—with disastrous results. All States have showed record deficits. Freight rates have increased by up to 50 per cent at one jump, and have already created user-resistance to an alarming extent.

British Railways should discontinue turning over to diesel and electric traction before it is too late, and use three- or four-cylinder compound 4-6-6 engines with 6-ft. 6-in. driving wheels and two boosters of 40 and 20 m.p.h. for fast passenger work, the same boiler and cylinder assembly with 5-ft. drivers in a 4-8-4 with two boosters of 30 and 15 m.p.h. for fast freight work, large capacity Garratts with similar features for extra heavy mineral trains and overnight freights, and silent, powerful, condensing steam railcars for branch line working.

Yours faithfully,

ROGER BOLAND

Middle Creek, Via Sarina, North Queensland

Southern Region Suburban Services

February 17

SIR,—It would be interesting to know how Mr. Thornton, in his letter in your issue of February 14, equates 17 eight-car London Transport trains with a maximum load of 1,000 passengers each, with 17 10-car trains of Southern Region stock, each with a load of up to 1,500. As no additional trains could be run via the District line, several would be necessary over the Southern Region route to Charing Cross and Cannon Street, and the net clearance of traffic would be reduced accordingly.

He might also care to explain his reason for assuming that all mid-Kent line passengers go as far as Charing Cross or Cannon Street, as his proposal makes no provision for Waterloo traffic; and, further, to suggest the proportion of travellers who would be prepared to spend 25 min. on the journey between New Cross and Charing Cross via the East London line when the journey over the direct Southern Region route takes 15 min.

There is also the question of an alternative service for the not inconsiderable numbers who now use the Circle line between its south side and Liverpool Street or beyond.

Yours faithfully,

L. A. MACK

13, Upper Grotto Road, Twickenham, Middlesex

THE SCRAP HEAP

Close Shave

A Hungarian driver and fireman have been given gallantry awards for bringing a steam-hauled train travelling at 50 m.p.h. to a stop eight paces away from a stationary goods train, and in one-third of the normal braking distance.

Embassy Station

Mr. Angus Malcolm, Ambassador to Tunisia . . . possesses what I believe is denied to all other heads of British Missions—a railway station at the bottom of his garden called "Ambassade de Grande Bretagne."—*"Peterborough" in "The Daily Telegraph."*

The Gold Rush

The passenger traffic through Winnipeg over the Canadian Pacific Railway for the past three weeks has been unprecedented in the history of the line. Each day it is necessary to divide the regular Pacific express into two and three sections of 10 cars each in order to accommodate the rush of people westward. This week the traffic is heavier than ever. Thursday's express from Montreal arrived in five different sections, between 6 p.m. and midnight, while yesterday's express arrived in seven sections with about 1,800 people aboard. Many of the passengers are bound for the Klondyke, but Manitoba is also benefiting.—*From "The Financial Times" of March* 19, 1898.

Movable Platforms

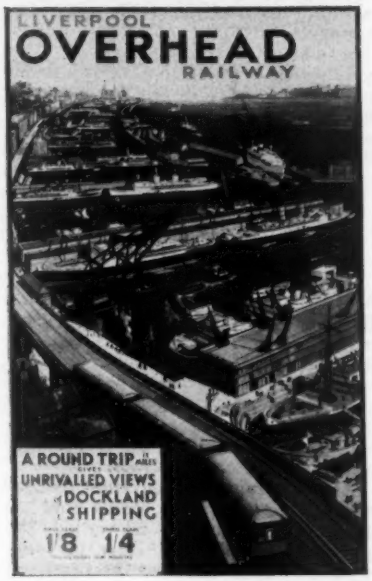
A letter published in a recent issue of *Country Life* drawing attention to the combined level-crossing gates and platforms at Halesworth, Suffolk, on the East Suffolk line of the former G.E.R., now the Eastern Region of British Railways, is a reminder that movable platforms, mainly spanning a track between two high platforms, were once more common than they are today, for obvious reasons. Classic examples of such structures no longer extant were those at Paddington, G.W.R., Waterloo, L.S.W.R. (across the single track from Waterloo Junction, S.E.C.R.), and Baker Street, Metropolitan Railway. A movable platform at Wood Lane, on the Central Line of London Transport, is on the loop platform used by trains terminating at that station; when longer trains were introduced 30 years ago, it proved necessary to lengthen the loop platform where the line to the depot joins the running line. A section of platform was built on rollers, which can be moved to a maximum distance of 3 ft. over the nearside track of the depot line to provide the necessary platform face for the end car of the train. It is pneumatically operated from the signalbox and is interlocked. There are movable platforms at other stations in East Anglia, and one at Brockenhurst, on the Southampton to Bournemouth line of the former L.S.W.R. They are necessarily confined to railways where high platforms are found.

Rudolf Diesel

One hundred years ago—on March 18, 1858—Rudolf Diesel was born in Paris, of German parentage. His father was a leather goods merchant, engaged in business in the French capital. In 1870, when the Franco-Prussian War broke out, the Diesels fled to London, and young Rudolf spent many hours in the British Museum and in the South Kensington Museums, including what is now the Science Museum. He then went to Augsburg, Bavaria, and studied under Barnicke, the mathematician. At Munich he studied thermodynamics under Professor Carl von Linde, the first man to liquefy air. Diesel's name will ever be associated with the compression-ignition engine, despite the earlier pioneer work of William Priestman and Akroyd Stuart. He took out his provisional patent on February 28, 1892, and was granted full cover in January, 1893. The first practical diesel engine was completed at Augsburg in 1897. Diesel disappeared from the Antwerp-Harwich boat *en route* to England on September 29, 1913.

Liverpool Overhead Railway Relics

Relics of the Liverpool Overhead Railway, which was closed on December 30, 1956, and purchased by George Cohen Sons & Co. Ltd. for dismantling,



Shipping featured in a poster of the former Liverpool Overhead Railway

have been presented by that firm to the Science Museum, South Kensington. They include some models, also posters of various dates. One of the more recent posters is reproduced in the accompanying illustration.

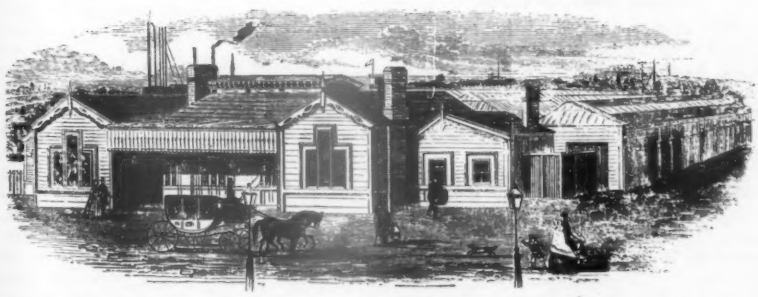
Service on the C.N.R.

In a world grown yearly more mundane, there is a splendor about travel on steel rails that nothing else can capture, nor where so many illusions of grandeur can be bought for so small a price. . . . Nowhere, except on a trans-ocean liner, do you get extravagantly looked after [as in a Canadian National Railways train] . . .

That is why, when I read Mr. Donald Gordon's report, my heart did a flip-flop when I came to the part about "possible innovations in service of meals." One thing I am prepared to bet, if the C.N.R. does convert to dinettes and throws all its fingerbowls out of the window, it will be a very superior dinette, for the tradition of service on so high a scale dies hard. Anyway, diners or dinettes—linen napkins or paper—here's one traveller who is ready at the drop of a hat or the least suggestion of a hint to take off in all directions on any of Mr. Gordon's trains.—*Ruth Morton in the "Dartmouth Free Press" (Dartmouth, Nova Scotia).*

First West-End Terminus in London

(*See editorial note on page* 355)



"Pimlico Terminus" at Battersea of the West End & Crystal Palace Railway (later L.B.S.C.R.)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

PAKISTAN

Tank Wagons Built at Moghalpura

For the first time in its history, 25 four-wheel broad gauge tank wagons have been built by the North Western Railway Works at Moghalpura. Work was put in hand in June, 1957, and completed by the end of November. The wagons have a capacity of 5,530 gal., which is stated to be considerably more than that of any tank wagon hitherto imported; the Pakistan-built wagons are stated also to be 15 cwt. lighter than wagons constructed abroad.

INDIA

Third Class in Expresses

The air-conditioned expresses between Delhi and Calcutta, Delhi and Bombay and Delhi and Madras now include in their composition ordinary third class coaches.

In each of the New Delhi-Howrah and New Delhi-Bombay Central trains there are two such coaches and in the New Delhi-Madras Central trains three ordinary third class coaches.

As these trains are the fastest on their respective routes, this means that on these routes, besides alleviating the overcrowding in third class in long-distance trains, the new arrangement affords third class passengers a substantially faster service than hitherto.

Re-railing Equipment

Demonstrations of MFD re-railing equipment were held in Dohad Locomotive Works and Lower Parel Works of the Western Railway in May, 1956. They included the re-railing of a condemned bogie, derailed at one end about 3 ft. off the track, within 10 min.; re-railing of a four-wheel wagon, derailed on one pair of wheels by about 1 ft., in 13 min.; re-railing of an "H" class tender, derailed of two pairs of wheels about 6 ft. off the track, in 20 min.; and an "H" class condemned locomotive in 45 min.

The Railway Board as a result sanctioned the purchase of one set of MFD re-railing equipment for the Western Railway, and this is now kept in the Parel shops.

CANADA

Prototype Heated Wagon

A Canadian National Railways prototype heated covered wagon recently made a test run between Montreal and Churchill, Manitoba. The wagon began its journey from Montreal loaded with dry freight and encountered temperatures as low as 40° below zero before reaching its destination. It was fitted with equipment to test its general suitability and the efficiency of its heating system.

It is designed to carry all winter traffic, such as vegetables, at present handled by refrigerator wagons. Besides having a greater capacity than the latter, 3,220 cu. ft. compared to 2,273 cu. ft., the new wagon would be much cheaper to produce. It is heated by two charcoal heaters under the floor which pipe fluid heat throughout the wagon, ensuring uniform temperatures and eliminating cold spots.

The prototype and the observation car, accommodating the test crew, were attached to freight trains for the whole journey. The new wagon carried a cargo of drugs, cosmetics, toilet articles, and groceries as far as Winnipeg, where it exchanged its load for fruit and vegetables for delivery to Churchill, Manitoba.

On a previous test run, carrying a cargo of potatoes between Prince Edward Island and Cochrane, Ontario, the wagon's performance was reported to be highly successful although no extremely low temperatures were encountered.

Diesel Educational Programme

To meet its expanding diesel operations, Canadian National Railways, during 1957, increased its diesel educational programme. Enrolment in these training courses totalled 3,085 by October 31. Some 2,800 C.N.R. personnel have completed the basic course for engine maintenance and are now taking further courses to become familiar with details of diesel locomotives of the various builders.

BRAZIL

Rails from Poland

The Brazilian Development Bank has agreed to purchase 100,000 tons of Polish rails and accessories, delivery to start in October next, payment to be made in Polish convention dollars. The Polish Government has undertaken to increase its normal purchases of Brazilian iron ore by 200,000 tons.

ARGENTINA

Heavy Election Traffic

The general elections in February placed a heavy burden on the General Roca Railway, and to a lesser degree on other lines, as many thousands of people on holiday had to be transported to Buenos Aires in order to register their votes.

The General Roca Railway arranged for six extra trains from Mar del Plata every day during the week ended February 23; these, with timetable trains, conveyed more than 50,000 passengers. As the line from Altamirano southwards is single, many special operating arrangements were necessary. A number of freight and parcel trains were cancelled. Each train had to make 12 crossings on the single line section. A further complication was that the terminus in Mar del Plata has only one platform capable of handling 12-coach trains.

UNITED STATES

Further Passenger Service Reductions

For the first time in its 67 years of running, the "Empire State Express" of the New York Central System was combined from February 16 with the "De Witt Clinton" between New York and Buffalo, and to make the 11 additional stops of the latter's schedule was decelerated 55 min. westbound and 35 min. eastbound; the opening of the New York Thruway has cut "Empire State" patronage by 12 per cent.

The effect of the opening of the new Connecticut Turnpike on the express service, hitherto mostly at hourly intervals, of the New York, New Haven & Hartford Railroad between New York and Boston has been so adverse that five trains each way have been taken off. Greyhound motorbuses are now making the run in 5 hr. 40 min. as compared with the 4 hr. of the "Mayflower," the fastest New Haven train route, and a normal overall journey time of 4¼ to 4¾ hr.

FRANCE

Tax to Cover R.A.T.P. Deficit

In view of the serious financial position of the Paris Transport Authority (Régie Autonome des Transports Parisiens), the Government has instituted, under the Finance Act of 1958, a special tax on all employers in the Paris area of 600 francs a month per employee. For the year 1956 R.A.T.P. operating receipts were 38,223 million francs against expenses of 59,029 million; in addition, there were receipts from other sources of a further 10,000 million francs, leaving a net deficit of approximately 11,000 million. The proceeds of the new tax are intended specifically to meet R.A.T.P. deficits.

MONACO

Deviation of Riviera Main Line

Modifications to the railway layout are being carried out by the S.N.C.F., which has a concession, valid until the end of 1982, for the operation of the Marseilles-Nice-Ventimiglia main line through the Principality, under an agreement concluded in 1956. A deviation line is being built from near Monaco Station eastwards for a little over two miles. There will be two tunnels, one 430 ft. and the other 10,000 ft. long, separated by a short viaduct. The new line will terminate in

French territory outside the limits of the Principality and will necessitate the closing of Monte Carlo station.

HUNGARY

Further Electrification

The State Railways are to spend £363,000 on electrification of the 90-mile Miskolc-Hatvan line this year; a total of £8 million is to be spent on rolling stock.

WESTERN GERMANY

Flame-thrower for Cleaning Points

The flame-thrower shown in the accompanying illustration has proved satisfactory for thawing and generally cleaning points and so on in temperatures down to 4° F. and even lower; equipment previously used was only partially successful. The new sets consist of a 2-h.p. petrol motor, consuming about 2¼ pints an hr. and feeding diesel oil at the rate of about 2·2 gal. an hr., producing a flame 4 ft. long and developing a temperature of 1,742° F. Besides melting ice, this clears away oil films, dirt, paper, or other rubbish which may happen to be present. The apparatus itself weighs 33 lb. or 55 lb. in full working order.

Apparatus for thawing and cleaning points in operation at Frankfurt Main Station, German Federal Railway; new relay interlocking signalbox in background

Publications Received

Owens African & Middle East Commerce & Travel & International Register, 1958. London: The Pan-African Commercial Directory Limited, 104, Plashet Road, E.13. 10¼ in × 7½ in. 1,043 pp. Price 65s.—The coverage of this fifth edition has been increased. The publication is concerned mainly with Africa, except the Union of South Africa, and with the Middle East, with part of the Mediterranean, Cyprus, Rhodes, and Malta. The sections on Portuguese East and West Africa and on Persia have been enlarged. The information on each territory is comprehensive, more particularly in the case of the African territories. In the sections devoted to the Belgian and French, and Portuguese colonies there are translations in French and Portuguese respectively. The particulars, concisely set out, relate to almost every aspect of the country and its economic and allied activities. There is a map of each country. Much travel information is supplied, including railway travel. The amount of railway information varies; in some cases brief particulars are given of diesel haulage, as in Ghana and Rhodesia, and passenger amenities. The whole work is well produced, and information can be easily found.

The B.E.A.M.A. Catalogue. Fourth Edition. Published for the British Electrical & Allied Manufacturers Association, by Iliffe & Sons Limited. 12 in. × 8½ in. 962 pp. Bound full cloth. Price £6.—The fourth edition of this catalogue, which is used throughout the world as a buyers guide to the products of the British electrical industry, has been produced earlier than usual, so that copies will be available for distribution at the Brussels Universal & International Exhibition which opens in April 1958. The descriptive catalogue pages have been designed throughout to a standard format, each division being printed in a distinctive second colour. The divisions are classified as electrical power plant; electrical equipment in industry, transport and communications; and domestic commercial electrical appliances, lighting, accessories and installation material. A five-language glossary of technical terms used in the buyers guide is included to help overseas buyers not fully conversant with English terminology. The catalogue is an outstanding example of close co-operation between members of an industry for the furtherance of overseas trade. Separate supplementary volumes of each division, including the complete trade directory of all member firms have been made available for use at the Brussels Exhibition.

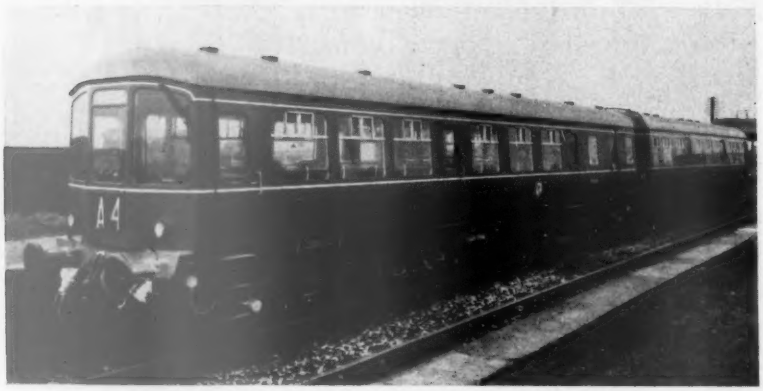
Air Filtration Equipment.—A loose-leaf catalogue which describes the range of filters produced by the company has been introduced by Intermit Limited, European licensees of Far-Air and Rotonamic air cleaning equipment. The filters cover applications for conditioned air, for engine intakes, and so on. Working efficiencies of these products are shown on graphs, and associated equipment is described. The catalogue is available free, on application to the Publications Department, Intermit Limited, 37, Bradford Street, Birmingham 5. It is intended to keep it up-to-date by the supply of folders and sheets as additions or modifications are made to the range of equipment.

Southern Region Freight Train Services.—A 44-page booklet issued by the Southern Region of British Railways gives details of principal freight services and facilities. The information includes a list of depots in the Region; direct services between principal places; scheduled arrival days for wagonload consignments between representative Southern stations and some chief towns in Great Britain; and fast freight train services in the Region. There are also lists of commercial and traffic officers, and references to the Green Arrow and Collico services.

Hotels and Restaurants in Great Britain and Ireland, 1958. Thirtieth edition. Official guide of the British Hotels & Restaurants Association, 88, Brook Street, W.1. 8¼ in × 5½ in. 483 pp. 24 pp. and folding map. Illustrated. Price 3s. 6d.—This year's edition retains the popular features of its predecessors. A series of road maps is provided, also a railway map of the United Kingdom, a special map of the London area, mileage tables, main-route diagrams showing distances, and details of ferry services.

Twin-Car Diesel Sets for British Railways

Integrally-constructed vehicles with B.U.T. power equipment



British Railways 300-h.p. twin-car diesel set built by Park Royal Vehicles Limited with integral body construction

PRODUCTION of 20 twin-car diesel sets by Park Royal Vehicles Limited for British Railways is now proceeding at the Crossley Motors works of the A.C.V. Group. The first four sets are now operating in the Llandudno, North Wales, area, in the London Midland Region.

For suburban operation the cars are paired, one power car and one trailer car, but provision is made for the through coupling of up to four pairs if required.

The power car is fitted with two B.U.T. "A" type horizontal 150 b.h.p. diesel engines underfloor mounted and driving through fluid coupling, four-speed epicyclic gearbox and freewheel to a gearbox on the inner axle of the adjacent bogie.

Leading dimensions of the vehicle are as follow:—

	ft.	in.
Length over headstocks	57	0
Bogie centres	40	0
Bogie wheelbase	8	6
Overall height from rail	12	4½
Overall width	9	0
Power car tare weight	33 tons 8 cwt.	
Trailer car tare weight	26 tons 7 cwt.	

Seating accommodation in the power car is for 52 second class passengers, with a luggage and guards compartment. In the trailer car the seating provision is for 16 first class and 48 second class passengers. This car is fitted with a lavatory. Both cars have a driver's compartment at one end. A feature of the seating is that no headrolls are fitted. The manufacturer, from its experience of road vehicle seating, claims that the wide angle visibility obtained with lower back seating, makes a useful contribution to the reduction in travel sickness. All seats are tubular frame, with Dunlopillo cushions and Hairlock squabs. The second class have a polished alloy top handrail.

Interior Finish

Armrests are provided on the first class. Moquette upholstery is used throughout to match the blue and grey trim in the first class saloon and the maroon and grey in the second class. A warm appearance is given to the interior by the use of leathercloth-covered lining panels up to cantrail level. Rubber-filled aluminium mouldings are fitted to protect the enamel of the roof covering behind the parcel rack. In a sunken pan at each doorway is a flush-fitting coir fibre door mat.

The floors of the coaches are linoleum covered, with the addition of carpets in the first class compartment. Passenger entrance doors, which open outwards, are fitted with Beclawat full-drop balanced windows. The main side windows are glazed in a wide aluminium pan moulding which also forms the drain trough. Standard sliding window ventilators are fitted, with Airvac extractor ventilators in the roof. The toilet compartment finish is ivory enamel with black mouldings.

Underframe

To reduce weight an integral construction of body and frame is used. The solebars are of $\frac{5}{16}$ in. m.s. fabricated Z section, connected transversely by the main channel section cross-

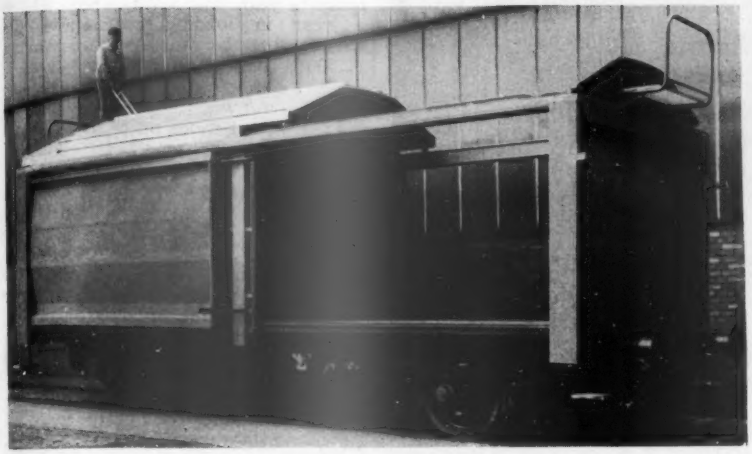
(*Continued on page* 364)

First class saloon looking towards driving compartment; note fixed armrests of seats

Interior view of third class saloon, showing two-person (left) and three-person seats (right)

A New Trend in Wagon Construction

Economies of sliding-roof and sliding-side types



SEAG sliding-roof sliding-side wagon of 15 *tons nominal capacity with both side doors and one roof door open*

QUICK and easy loading and unloading of railway wagons is coming to be more and more important in the expeditious movement of traffic, because of its potential effects in increasing appreciably the proportion of total time in which a wagon is actually moving. At the moment this proportion in England is no more than 3½ to 4 hr. out of every 24 hr., and it is little more elsewhere in Europe. Two modern and effective variants of the normal covered wagon which are now giving considerably reduced terminal time are those with sliding roof, and the further development in which sliding sides are used alone or are additional to the sliding roof.

Though one or two prototypes following these ideas have been tried, the only forms which have met with success and been applied in large numbers are those evolved by Siegener Eisenbahnbedarf (SEAG); and actually this builder—and licensees—is the only one to build both variants. This form of sliding-roof wagon has been operating in normal traffic since 1954, and over 4,000 are now running in Germany, France, Switzerland, Holland, Austria, and elsewhere, with something like another 1,000 under construction. Prototypes of the sliding-side variety were put into service in 1955, and the first series of 100 was introduced by the German Federal Railway in 1956-57.

Construction

Constructional details of the SEAG sliding-roof wagon are well known, and the design of the sliding roofs and walls guarantees a tight and water-proof sealing of the wagon. Also, as the sliding walls are first lifted away from the wagon body and then moved over the other half of the wall, the opening and closing procedures cannot be blocked by goods, even if these have been shifted during transport. In both sliding-roof and sliding-side wagons, large hinged-end doors can be fitted also. The sliding-roof principle is applicable also to wooden-side wagons, and actually is so applied in Switzerland. Many sliding roofs are of light metal, but others are of steel; and in the latest models can be opened or closed by a man standing on the ground.

The considerable terminal advantages of the sliding-roof wagon, in loading and unloading by crane, are extended in the sliding-side wagon to goods handling by the fork-lift truck, which in many countries has now been developed intensively. Pallet loading in certain parts of Europe is more or less being enforced by NATO, and this make of wagon has been suited both to the 1,200 mm. by 1,000 mm. (47 in. by 39½ in.) pallet standardised by NATO, and the smaller 1,000 mm. by 800 mm. (39½ in. by 31½ in.) size previously standardised in several countries; and pallet loading or unloading operations can be carried on simultaneously through side doors and end doors in these particular types of wagons.

Many of the sliding-roof wagons are used for the transport of thin steel and alloy steel sheets, particularly for the automobile industry; and several steel-makers and automobile factories in Germany have made absolute stipulation that this traffic in sheets should be transported between maker and customer in these wagons, and have altered all their wagon loading and unloading equipment and procedures to suit. This insistence is due first to the savings in handling time and charges, and secondly to the greater protection of the load.

An independent investigation made at 21 different works handling thin sheets and plates, showed that unloading of

Using the large hinged end door and sliding roof to load long tubes quickly by mobile crane, the arm of which is seen at the top of the picture

Schindler-SEAG sliding-roof wagon with wooden sides, Swiss Federal Railways

Manufacture of light-alloy sliding roofs for SGP-SEAG wagons at the Simmering Works in Vienna for the Austrian Federal Railways

sheets from a conventional 15-ton covered wagon took four men anything from 2½ to 6 hr., and cost £1½ to £4, whereas with the SEAG sliding-roof wagons two workers needed only ¼ hr. to 1 hr. and the cost was 4s. to 10s. Loading of the same quantity and kind of sheets on the average occupied four workers 4 hr., at a cost of £2½, whereas with the sliding-roof wagon two workers could load the material in anything from ½ to 2 hr., according to the facilities, at a cost of 10s. or 11s. One maker using four of these vans daily, and having some 1,100 loading processes a year, was saving about £2,150 a year in loading costs, and the customer at the other end was saving £2,500 a year in unloading charges.

Use of Wagons

Light boxed goods up to the capacity of a 15-ton van were recorded to be loaded and unloaded in about one-sixth of the time occupied with a normal covered wagon and half the time needed for an unprotected open wagon. In Europe, apart from the thin steel sheet traffic, these SEAG wagons are used normally for the transport of jute and cotton bales, refrigerators, copper bars, and certain bagged goods such as sugar and cement.

Direct savings to the railway are the increased wagon availability, reduced expenditure through damage to goods, smaller loss by pilfering where lighter goods and parcels are concerned, and tarpaulin economy in covering and wastage where valuable freight has hitherto been carried in open wagons and can now be handled and transported conveniently in these wagons.

Twin-Car Diesel Sets

(*Concluded from page* 362)

members. Through these pass the two centre longitudinal members of 8 in. × 3 in. m.s. rolled channel section.

Additional channel crossmembers are arranged in the two end bays to distribute buffing and draw gear loads.

The headstocks are designed to accommodate the light alloy Oleo Pneumatic buffers and standard screw couplings. Two of the channel section crossmembers are positioned at the bogie pivot positions, spaced by $\frac{5}{16}$-in. thick m.s. plate welded above and below.

British Railways standard bogies, with SKF self-aligning axleboxes, are fitted.

Body Structure

The connection between the body and underframe is by means of a full-length $\frac{5}{16}$-in. thick m.s. angle welded to the solebar. To this member are welded the main bodyside pillars of 14 g. m.s. top-hat section. An angle is welded to the inner face of each pillar and to the longitudinal member to carry the body-side edge of the flooring.

The complete bodyside structure of vertical and longitudinal members are jig welded into units before panelling. Attachment of the 16 g. exterior panels is by welding through vertical slots in the pillar faces, a heavy plate jig being used to minimise welding distortion.

The required body stiffness is largely obtained by the use of a 15-in. deep 10 g. exterior core panel running the full length of the body. On assembly the underframe is set up at the correct camber and fully supported until the front and rear end frames, bodyside units and roof have been attached. The roofsticks are of two aluminium alloy angles spaced by ⅛ in. alloy connecting plates. The roofsticks are connected to gussets welded to the Z section longitudinal member at the top of the roof stress panels. The roof exterior panels are of 16 g. aluminium alloy, riveted to the roof-sticks and overlapped and riveted to the stress panels. Limpet asbestos is sprayed on the inside surface of all exterior panelling.

The flooring, which is bolted to the main crossmembers and to the intermediate supports, is in $\frac{7}{8}$-in. thick Douglas fir ply with a layer of ½-in. thick Insulwood laid over for insulation. The floor covering is in $\frac{3}{16}$-in. thick linoleum.

The finished body structure was tested at 200 per cent overload. Maximum frame deflection at this load was ¼ in. and no permanent set was registered on removal of the load.

Electrical Equipment

The power car is fitted with an engine-driven Stone's generator and control panel. On the trailer car the generator is bogie-mounted, axle-driven, incorporating a reversible drive. The 440 A.-hr. lead-acid batteries, with external charging sockets, are carried in containers mounted between the bogies. Saloon lighting controllers, arranged for full- and half-light switching, are fitted in both driving compartments and in the guard's compartment. Standard head and marker lamps are provided at the driving ends, and the normal illuminated destination indicators are incorporated in the dome panelling. Light jumper sockets for inter-car connections are mounted on the headstocks. The main wiring for lighting, heating, control circuits, and so on, is carried in trunking in the car floor, from which conduits are taken to each unit. British Railways standard heating system using two Smith's combustion heaters supplying full-length ducts in the saloons are fitted.

Controls and Brakes

The power cars are fitted with two 22-in. vacuum brake cylinders and the trailer cars with two 18-in. cylinders. These are controlled by the Gresham & Craven quick-release brake system, using two engine-driven rotary exhausters. Air pressure for the engine and transmission control units is obtained from two Westinghouse compressors.

Principal sub-contractors include :—

Engines, transmission and control gear	British United Traction Limited
Underframe and bogie frames	John Thompson (Motor Pressings) Limited
Vacuum brake equipment	Gresham & Craven Limited
Axleboxes	Skefko Ball Bearing Co. Ltd.
Wheels and axles	Owen & Dyson Limited
Laminated springs ..	Samuel Willford Limited
Coil springs	Turton Bros. & Matthews Ltd.
Electrical equipment ..	J. Stone & Co. (Deptford) Ltd.
Insulation and asbestos ..	J. W. Roberts Limited
Main windows	Hallam, Sleigh & Cheston Limited
Drop windows and door gear	Beckett, Laycock & Watkinson Limited
Seat frames and luggage racks	Deans & Son (Yorkshire) Ltd.

Additional Drawing Office Accommodation at Paddington

Conversion of Mint stables to provide further premises for Civil Engineer's Department

Mint stables at Paddington converted to engineering department drawing offices, showing the glazed galleries of two blocks, and footbridge

THE effective recruitment of suitable technical staff to assist with the Civil Engineering work under the railway modernisation programme demanded additional drawing-office accomodation at headquarters.

The Western Region of British Railways examined several sites in the Paddington area, but land values precluded building upon new sites. It was therefore decided to convert a block of former stables, in Winsland Street, adjoining Paddington Station. The resulting drawing offices are comfortable, well-equipped, and light.

The stables consisted of four connecting three-storey blocks grouped around a courtyard, in which stood a smaller, self-contained block, also of three stories. The stalls on each floor were connected by galleries, round the courtyard sides of the blocks, with ramps allowing horses to reach ground level.

Conversion

In the extensive work of converting the upper floors for the Civil Engineering Department, all the existing windows had to be enlarged, and fitted with modern metal frames, but many of the old partition walls were suitably-placed to allow of their incorporation in the new layout, subject to the provision of access- and fire-doors. For greater accessibility, the extremities of the upper floor gallery have been linked by a footbridge, formed with prefabricated R.C. side-girders and slab-decking. Connection between floors is provided by a completely-enclosed, self-trimming electric lift, running within a steel-framed shaft, and by stairways leading from the entrance hall. The old horse ramps have been retained as fire exits.

Unit-type furniture, with lino tops in bright colours, and built-in storage units (and back-reference tables in some models) have been specially designed by the department to conform to its own needs. The ample provision of roof lights and windows gives excellent natural illumination throughout most of the working day, with venetian-type blinds dispelling any glare from direct sunlight. Artificial illumination is rarely needed, but in use provides an even, all-over lighting of the offices, and, supplemented by individual drawing-board- and desk-lamps of angle-poise design, cuts shadows to a minimum.

The Plan-Printing Section, for long hampered by working in cramped quarters, and with out-of-date equipment, has now been provided with an Ozamaster printing machine, installed in well-lit and spacious premises.

The Photographic Section has four dark-rooms, in which the benches have been fitted with acid-resistant tops, executed in Vulcathene, and the developing tanks are equipped with agitators. In this case the office intercommunication system is of a special type suitable for use in dark rooms.

The cinema, used for showing instructional films and also for meetings, is fitted out with comfortably-upholstered tip-up seats, and is equipped with sound- and still-projectors with built-in loud-speakers providing efficient diffusion of sound waves. A special feature is the soundproof recording chamber, in which sound tracks may be added as accompaniments to films made on outside railway locations. This chamber also allows the provision of an English-language commentary to accompany a foreign film.

The whole project is centrally-heated from a boiler-house using fully-automatic oil-fired boilers and a domestic hot-water boiler. Indoor temperature is regulated by a thermostatically-controlled compensator which varies the temperature within the buildings in sympathy with outdoor weather conditions. Services are distributed through Keyfibre under-floor ducting.

The success of the initial conversion has since led to the conversion of the lower floor which will be for the use of the Operating Department.

Contractors for the successive schemes were Chown, and Kyle Stewart, and the work was carried out to the designs of the Chief Civil Engineer of the Region, Mr. M. G. R. Smith.

Office room being converted, showing glazed roof lights

B.T.C. Hotels & Catering Services

A department which meets every catering need from that of top business management to those of the family and individual

The Beaufort Restaurant of the Great Eastern Hotel, Liverpool Street

THE Hotels & Catering Services of the British Transport Commission offer a range of refreshment facilities and accommodation probably unequalled by any other single concern in the world. The division operates a chain of 35 first-class hotels, numerous station refreshment rooms and snack bars; dining and buffet cars on trains, and several comprehensive services. Because adaptation to individual requirement is practised, the whole range covers every catering need and pocket. Thus the division can supply a banquet and a sandwich with equal efficiency and with the same appearance of ease.

In covering so wide a field the service necessarily has made a close study of market conditions and, in particular, of public taste. This, developing in accordance with new standards of service and design continually suggested by television and the cinema, is constantly changing. No longer are users of lower-cost refreshment facilities content to take their meals in unimaginative and drab surroundings. On the contrary, a high standard of décor is expected.

To meet and anticipate this demand, the division employs a highly-trained and extremely gifted technical staff. One result of this concentration on aesthetics is apparent in an increasing reaction against standardisation of design. Illustrated in this article are examples of British Transport catering premises now in use. A study of these will show the equality of care given to the design of establishments catering for all levels of expenditure. Comparison will show the degree of individuality accorded to each subject.

Even under the restrictive conditions of the moving train has good design been incorporated, and here the difficulties inherent in minimal space and movement are augmented by the need to provide against possible careless treatment by the travelling public. Popular demands for better standards are not always accompanied by a natural disposition toward civilised usage.

Packed Meals

For those who do not wish to make use of train refreshment facilities and to cover the journey made when buffet or restaurant car is not provided, a system of packed meals is in operation. Briefly summarised, these fall into three grades. Bag-packed refreshments cost 2s. upwards, packed cartons are available at 2s. 6d. and 3s. 6d., and tray and cased meals are offered from 4s. 6d. and 6s. respectively, according to content. Although quotations list the make-up of each of these grades of meal, items may be changed to suit individual taste.

The packed meal service for the moment is largely restricted to party catering. This offers the same meals on demand or to order, according to grade of refreshment required. Groups of 60 or more taking packed meals may hire insulated thermal urns of tea, and tray meals in portable containers may be had by parties of 16 upwards.

So far, the requirements of indivi-

Examples of the packed meal service: (Left): "Compakt" meal; (right): tray meal

duals or groups wishing to incur only a modest financial outlay have been considered. For those requiring more elaborate refreshment or first-class hotel accommodation, the division offers excellent facilities. Even during food rationing, the dining cars of main-line trains kept up a consistently good standard of cooking and service, and at one time it was not unknown for businessmen to make an otherwise superfluous return journey by train to get a good meal. With the abolition of restrictions on food supply and a return to normal conditions the department has maintained and improved these standards. The 4-course luncheon at 9s. 6d. compares very favourably with meals of a similar standard obtainable elsewhere, and the wine list covers a wide range of wines and spirits at extremely competitive prices.

With regard to transport hotels, the majority of these are listed in the A.A. Handbook as four-star and two—the Gleneagles in Perthshire and the Turnberry in Ayrshire—as five-star. These hotels concentrate equally on the individual and on the group. Particularly in those hotels situated in rural districts are efforts made to maintain the atmosphere of "the great house" and there are sound grounds for the division's claim that Britain's first-class hotels are fast becoming the sole trustees of gracious living.

Restaurant car (unclassed) in use on Western Region of British Railways

The Business Community

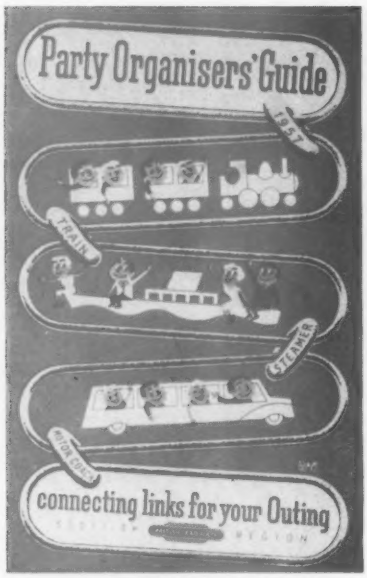
Group catering—and here the division particularly has in mind the top-level business function—receives detailed attention, and some of the transport hotels are especially suited to supply this demand. First among these are Gleneagles and Turnberry where, after completion of business (and, in the case of the womenfolk, during the sessions), relaxation may be had in beautiful surroundings. Facilities possessed by both hotels include shops, hairdressers, a cinema, ballroom, golf courses, tennis courts, indoor swimming pool, and fishing. Some of these amenities are offered on a more modest scale at many of the other transport hotels.

The top-level business community is recognised as a very real and profitable market. To cater for its lunchtime needs in the City area, the Abercorn Rooms at Liverpool Street Station have been redecorated and reorganised. Under the new arrangements first-class food and service are offered. The furnishings and decoration have been carefully chosen to create a suitably impressive atmosphere for the important business function.

Publicity

Strong efforts are made to publicise the various activities of the B.T.C. Hotels & Catering Services in an excellent series of leaflets and brochures. Some of these, and particularly those from the full-colour range describing individual hotels, are fine pieces of work worthy of permanent retention. In addition to half-tone and colour illustrations, information on local railways, roads, and airports is included.

Examples of modern refreshment premises owned by the division; (Left): Refreshment room at East Croydon Station; (Right): La Caravelle Restaurant, North British Hotel, Edinburgh



Cover design of "Party Organisers' Guide"

Two booklets entitled respectively "Good Relations" and "The Chairman Requests the Pleasure . . ." have been designed for the attention of the organiser of the important business party. The first booklet describes four hotels in the English countryside particularly suitable for the smaller conference, and the second deals rather more elaborately with four of the large Scottish hotels which also make a special point of catering for this class of business. In addition to descriptions and illustrations of the hotels concerned, this brochure contains road and rail maps together with plans of the hotels' public rooms. There is also a map of Edinburgh which shows places of interest to visitors.

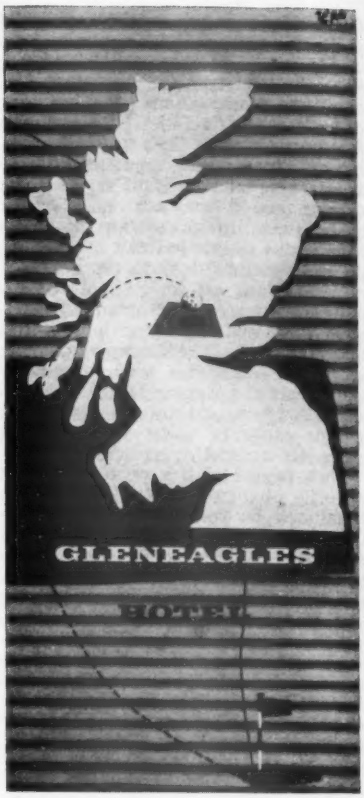
A general folder is also issued. This includes a list of all transport hotels and is illustrated with photographs and a map showing sites, airports, and railway lines.

Party Organisers' Guide

The "Party Organisers' Guide" gives full illustrated particulars of organised tours available for works or party outings. It is made clear that listed tours are given as specimens only and that others can be arranged to suit individual requirements. Other facilities described in the booklet are the "television train," in which entertainment given in one section is televised over closed circuit to all other carriages; and the packed meal services. Allied to the publicity on the latter service is a tariff handed to continental visitors boarding boat-trains to London. This leaflet, printed in four languages each with English translations, gives prices of snacks available on the train.

Although more strictly to be included in the category of public relations rather than that of publicity material, reference may here be made to the menu-cards produced by the division. Those used on named trains are examples of quality work in two or three colours. Contemporary design incorporating features associated with the region entered by the train on which the menu is used covers outer surfaces of the folder, which is finished with a plastic glaze. The menu card itself is contained in a pocket attached to the inside front cover of the folder. Permanent details on the inner sides include brief particulars and prices of meals and refreshments available throughout the day, including soft and alcoholic drinks.

Distinctive menu-cards also are designed for station refreshment rooms and for the restaurants of transport hotels. Some of these carry highly elaborate designs and care is paid to elegance of typography and layout.



Front cover of illustrated leaflet for Gleneagles

In a further effort to acquaint the public with the full extent of its services, the division has designed and built an exhibition stand. This, which is intended for display throughout Britain, is illustrated below. It consists of a display of food and beverages, and a series of illuminated views of many of the division's refreshment premises.

(Left): Exhibition stand designed and built by the division for display throughout Britain. (Right): Tariff card in use on "The Red Dragon"

RAILWAY NEWS SECTION

PERSONAL

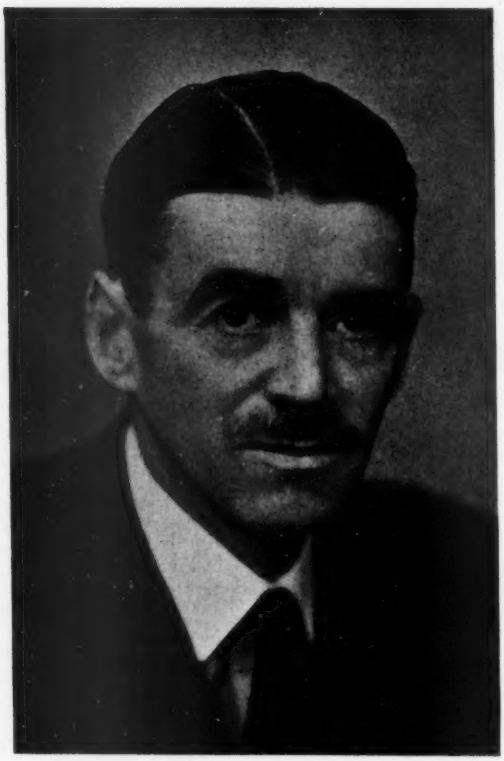
Major-General G. N. Russell, General Manager of British Road Services, Chairman of the British Road Services Board of Management, and a member of the Eastern Area Board of the British Transport Commission, has been elected President of the Institute of Transport for the year 1958-59. General Russell will take office on October 1 next.

We regret to record the death, on March 20, at the age of 61, of Lt.-Colonel G. R. S. Wilson, R.E. (retired), Chief Inspecting Officer of Railways, Ministry of Transport & Civil Aviation. Colonel Wilson was educated at Marlborough and at the R.M.A., Woolwich. He was commissioned in the Royal Engineers in November, 1914, and went to France in May, 1915, serving in field companies there and in Macedonia throughout the war. He subsequently commanded a field company in Ireland, and in 1921 was employed by the Colonial Office for the survey work of the Syria-Palestine Boundary Commission. Thereafter he served with railway troops at Longmoor until 1924, during which time he was also in charge of the Catterick Military Railway and was attached to the South Eastern & Chatham Railway for a year's training. From 1924 to 1930 he was employed in the Directorate of Movements at the War Office, after which he served two years in Malta. He returned to the Railway Training Centre at Longmoor, where he became an Instructor, after undergoing training with the Southern Railway. In 1935, having retired from the Royal Engineers, he was appointed an Assistant Inspecting Officer of Railways in the Ministry of Transport. Colonel Wilson was recalled to the army on the outbreak of war in 1939, and served as Assistant Director of Railways with the B.E.F. in France until June, 1940, when he resumed his duties with the Railway Inspectorate. He was appointed an Inspecting Officer of Railways in 1941, and Chief Inspecting Officer in 1949. In 1949, he also became one of two British Government representatives on the Permanent Commission of the International Railway Congress Association. He was made a C.B.E. in the 1953 Coronation Honours. Colonel Wilson was responsible for advising the Minister on the new British automatic train control equipment, and recommended the system approved by the Minister of Transport & Civil Aviation, in November, 1956. He visited the United States to study safety aspects in 1949, and in 1954, went to France at the invitation of the French National Railways to see latest methods of railway electrification.

A Requiem Mass was held on March 25, at the Church of the Immaculate Conception, Farm Street, London, W.1. In addition to family mourners, those present included:—

Mr. J. W. Watkins (representing Sir Brian Robertson and other members of the British Transport Commission unable to attend); Sir J. Landale Train and Lady Train; Messrs. S. B. Taylor; R. Thompson (also representing Mr. R. C. Bond); J. H. Fraser; E. J. Vipond;

Mr. W. H. Jenkins
Appointed Chief Traffic Manager, New South Wales Department of Railways



The late Lt.-Colonel G. R. S. Wilson
Chief Inspecting Officer of Railways, Ministry of Transport & Civil Aviation, 1949-58

Mr. W. H. Jenkins, O.B.E., M.Inst.T., Transportation Manager & Deputy Chief Traffic Manager of the New South Wales Department of Railways, who, as recorded in our March 7 issue, has been appointed Chief Traffic Manager of that railway with effect from February 1, 1958, succeeds Mr. D. J. Howse, whose retirement was recorded in our January 31 issue. Mr. Jenkins joined the New South Wales Railways in 1912, and later served with the Australian Imperial Forces in Egypt, France and Belgium in the 1914-18 war. He has had extensive experience of railway clerical, operating and administrative duties. He was attached to the personal staff of the Northern Area Commissioner from 1925 to 1932, and subsequently filled the positions of Train Controller, Special Officer, and Outdoor Traffic Superintendent before appointment as Traffic Works Superintendent in 1948. He became Passenger Trains Superintendent in 1951 and Transportation Manager in 1952. He acted as Chief Traffic Manager for

J. L. Harrington (also representing I.R.C.A.); H. C. Johnson; S. G. Hearn; J. W. Dedman; J. Bonham-Carter (also representing Mr. M. R. Bonavia); J. W. Grieve (also representing Mr. K. J. Cook); R. E. Sadler (also representing Mr. A. K. Ferris); E. Howell (also representing Mr. G. F. Fiennes); L. W. Cox (also representing Mr. David Blee); C. G. Derbyshire (also representing Mr. E. G. Brentnall); E. L. Trippitt (also representing Mr. A. Dean); H. M. Lattimer (also representing Messrs. J. Ness and F. C. Margetts); C. P. Hopkins (also representing Mr. H. A. Short); H. B. Taylor (also representing Mr. S. G. Fitch); T. E. Chrimes; Lotbiniere; Brigadier H. L. Woodhouse; Brigadier R. Micklem; Colonel H. G. Pottle; Colonel F. J. Biddulph; Colonel F. E. Orange-Bromehead; Lt.-Colonel G. Low, and other serving and retired officers; Mr. R. J. Gunter.

C.A.L. writes in *The Times*:—

The sudden death of Lt. Colonel G. R. S. (Bob) Wilson has deprived the Railway Inspectorate of an inspired leader and friend, and has removed a man admired and respected by railwaymen of whom all all ranks have enjoyed his courtesy and consideration.

His loyalty, generosity and humanity were characteristics which inspired his staff, and his wise and unselfish advice helped them constantly.

His inquiry into the Harrow disaster focused attention upon Bob Wilson, but few realised the great strain imposed on him or appreciated the depth of his sympathy with all who suffered in that tragedy. His health was impaired by this profound investigation, but he resumed work after some weeks rest. He continued to watch over the measures for railway safety and held further inquiries into accidents, including that at Barnes in 1955 and most recently that at Lewisham which unhappily he did not live to complete. The strain and distress occasioned by this last investigation may well have contributed to his untimely death.

Mr. S. T. Clayton
Motive Power Superintendent, L.M. Region, 1954-58

Mr. Eric H. Baker
Appointed Motive Power Officer, London Midland Region

Messrs. K. W. C. Grand; A. W. Woodbridge (also representing the Institution of Railway Signal Engineers); Sir John Elliot; Messrs. B. H. Harbour; F. G. Maxwell; C. E. Dunton; H. T. Hutchings; Alex J. Webb; R. Dell; E. G. Marsden (also representing Maj.-General G. N. Russell, General Manager, British Road Services and the B.R.S. Board of Management); A. Toneri (also representing Mr. C. E. R. Sherrington); Sir Michael Barrington-Ward; Sir Reginald Hill; Messrs. Paul Drew (also representing Mr. B. W. C. Cooke); C. F. Klapper; Sir Gilmour Jenkins (representing the Minister of Transport & Civil Aviation); Messrs. R. R. Goodison; D. O'Neill; Mrs. A. Munro; Messrs. E. W. Godfrey; H. C. Adams (representing Chief Engineer, Highways Engineering); Brigadier and Mrs. C. A. Langley; Colonel and Mrs. D. McMullen; Colonel and Mrs. W. P. Reed; Lt. Colonel and Mrs. E. Woodhouse; Colonel J. R. Walker; Messrs. C. H. Hewison; R. H. Williams (retired); J. A. Sinclair; A. S. Gillies; Mrs. K. Clarke; Brigadier C. H. Barnett; Brigadier P. D. G. Buchanan; Brigadier H. A. Joly de

His distinguishing love of railways was early exemplified when in his schooldays he contrived to frequent a Wiltshire Signal box, and he continued throughout his life to correspond with the signalman who first taught him the rudiments of railway operation. His remarkable bent for mechanical engineering found expression in his delighted study of locomotives, of which he was a connoisseur. He was completely at home on the footplate and he often astonished us, his colleagues, by his detailed knowledge of engines. Even in Continental trains his ability was illustrated when he helped the driver to locate and adjust a fault in the engine of the Sud express behind which he and his family were travelling to the Basque country on holiday.

Scientific enthusiasm for railways coupled with his clear analytical mind fitted him admirably for his work in the Ministry of Transport, and when in 1949 he became Chief Inspecting Officer of Railways his gifts and knowledge had worthy

Bob Wilson was a delightful and informed companion, a keen fisherman and an ardent yachtsman, well known at Bosham where he was often at the helm of his 16-ft. dinghy "Isabel." He was no mean linguist and an eager traveller whose sympathies were international. His friends mourn a Christian gentleman who cherished and furthered the high traditions of his calling.

Mr. J. E. Todd, Engineering Assistant, Doncaster, Eastern Region, British Railways, has been elected an Associate Member of the Institution of Civil Engineers.

Mr. S. T. Clayton, whose retirement from the position of Motive Power Superintendent, London Midland Region, British Railways, was recorded in our March 7

Mr. R. D. Matthews
Appointed General Passenger Agent, Winnipeg, C.P.R.

Mr. W. E. Clampitt
Appointed General Passenger Agent, Montreal, C.P.R.

Mr. C. G. Jordan
Appointed General Passenger Agent, Vancouver, C.P.R.

issue, began his railway career as an apprentice with the Lancashire & Yorkshire Railway at Horwich Works in 1909. After war service he returned to the railway and gained experience at Wakefield, Low Moor (Bradford), Sowerby Bridge, and Lower Darwen Motive Power Depots. After various district and divisional appointments, Mr. Clayton served as District Locomotive Superintendent at Bank Hall (Liverpool), Rugby, and Polmadie. In 1945 he was appointed General Assistant (Motive Power) to the Operating Manager, Northern Division, Glasgow L.M.S.R., and in 1949 became District Motive Power Superintendent, Glasgow (North), Scottish Region. He was appointed Assistant Motive Power Superintendent of the London Midland Region in 1949 and Motive Power Superintendent in 1954.

Mr. Eric H. Baker, M.I.Mech.E., M.Inst.T., M.I.Loco.E., who becomes Motive Power Officer, London Midland Region, British Railways, began his railway career in 1921 as a premium apprentice in Doncaster Locomotive Works. During this period he attended a Works Pupils' course at Sheffield University. In 1935, after service at a number of motive power depots, he was made a Technical Assistant to the Locomotive Running Superintendent, Southern Area. In 1937, he became Assistant District Locomotive Superintendent, West Riding, and, in 1942, took up a similar position at Cambridge. In 1944 Mr. Baker was appointed Assistant to the Locomotive Running Superintendent, Eastern Section, Liverpool Street. He became District Locomotive Superintendent at Peterborough in 1945 and at Gorton the following year. In December, 1948, he was appointed Assistant Divisional Motive Power Superintendent, Derby, L.M.R., and, in 1954, Divisional Motive Power Superintendent, Crewe, the position he has now vacated.

Mr. R. D. Matthews, who, as recorded in our March 7 issue, has been appointed General Passenger Agent at Winnipeg for the Canadian Pacific Railway, has been Assistant General Passenger Agent at Montreal since 1955. Previously, from 1952, he had been District Passenger Agent at Regina. He joined the C.P.R. in 1924 when he worked during school holidays with a cable gang at Rocanville, Sask. After graduation from Queen's University, he joined the Passenger Department of the company at his home town of Brandon. He served on the Pacific Empresses of the ocean steamship services, at the Seigniory Club in Montebello, Que., and at Vancouver and Victoria between 1935-1950.

Mr. W. E. Clampitt, who, as recorded in our March 7 issue, has been appointed General Passenger Agent, Montreal, Canadian Pacific Railway, has been District Passenger Agent at Regina since 1955, and held the same position at Saint John, N.B. from 1952 to 1955. He was Chief Clerk to the Passenger Traffic Manager at Winnipeg when he was posted to Saint John in 1952 and, before that, was Chief Clerk at Vancouver, where he first joined the company in 1928.

Mr. Christopher Fawcett, whose death, at the age of 75, was recorded in our March 21 issue was formerly Engineer in Charge of the Locomotive Section of Messrs. Rendel Palmer & Tritton. Educated at King Edward VI Grammar School, Macclesfield, and at the Manchester and Glasgow Schools of Technology, he became a locomotive pupil on the former North Staffordshire Railway. In 1903 he joined the North British Locomotive Co. Ltd. as a draughtsman. He joined the inspection staff of Messrs. Rendel Palmer & Tritton in 1908, and was subsequently appointed Engineer in Charge of the firm's Glasgow office. He became a member of the Institution of Locomotive Engineers in 1916. In 1919 he became Works Manager of William Beardsmore Co. Ltd. He returned to the London office of Messrs. Rendel Palmer & Tritton in 1924, later becoming Engineer in Charge of the Locomotive Section. In 1942, and again in 1947, he went to America as Technical Adviser to the Indian Supply Mission in connection with the purchase and supply of steam locomotives manufactured in that country and in Canada. He visited India and Pakistan in 1950 in connection with this equipment, the design of which was adopted as standard in India. Mr. Fawcett retired in 1954.

Mr. C. G. Jordan, who, as recorded in our March 7 issue, has been appointed General Passenger Agent at Vancouver for the Canadian Pacific Railway, has been General Passenger Agent at Winnipeg for the past six years. From 1950-52 he was Assistant General Passenger Agent at Vancouver. He first joined the railway at Saint John, N.B., in 1919, was on Saint John and Quebec City port staffs between 1923 and 1927, and worked in United States offices at Buffalo, Chicago, and Seattle between 1927 and 1950.

The following appointments have been anuounced by the Malayan Railway:—

Mr. M. P. V. Hannan to be Principal Administrative Officer.

Mr. L. A. Perkins to be Chief Accountant.

Mr. J. L. Greer to be Deputy Chief Civil Engineer.

Mr. J. P. Cunliffe to be Assistant Chief Engineer (Signals).

Mr. A. D. Eaton to be Assistant Civil Engineer.

Mr. W. H. McAughty to be Assistant Civil Engineer.

Mr. S. Mailvaganampillai to be Assistant Signal Engineer.

Mr. J. R. Palmer to be Assistant Traffic Manager.

Mr. Lim Cheng Chuan to be Assistant Traffic Superintendent.

Mr. Chan Peng Khuen to be Locomotive Running Superintendent.

The following appointments have been announced by New Zealand Government Railways: Mr. L. M. Johnston, Mr. E. M. Read, and Mr. W. F. Hudson to be District Mechanical Engineers in the Wellington, Christchurch and Dunedin districts respectively.

We regret to record the death, on March 21, while in Venezuela, of Mr. F. A. Greaves, Partner in the firm of Messrs. Rendel Palmer and Tritton, Consulting Engineers. He was a member of the Institution of Civil Engineers.

NEW EQUIPMENT AND PROCESSES

Diesel-Powered Mobile Crane

A FOUR-TON model, the KL 44B, has been added to the range of Jones diesel-mechanical cranes. It is a modification of the KL 44, being generally similar but having a lower powered engine.

Advantage has been taken of the fact that the high operating speeds of the KL 44 are not required by every operator needing a four-ton capacity machine. By modifying these, a less powerful engine has been introduced while maintaining the same lifting capacity. A reduction in price of the machine is thus made possible. The engine is an air-cooled diesel.

The reduced hoisting speed in low gear with maximum load on two falls of rope is 22 ft. per min., slewing speed 2 r.p.m., and top travelling speed 3 m.p.h. The four-ton maximum lift is handled at 8 ft. radius. Two-wheel differential is standard, but direct drive models are available. The superstructure is mounted on an all-steel four-wheel chassis.

Up to three crane motions can be operated simultaneously, slewing through 360 deg., hoisting or lowering with maximum loads, and derricking or travelling. The crane's manoeuvrability and its ability to turn inside a tight circle allows the crane to work in confined spaces and at awkward angles. A variety of jibs, both straight and swan neck, are available.

Further details may be obtained from the distributor in the U.K., George Cohen 600 Group Limited, Wood Lane, London, W.12.

Earth-Moving Equipment

THE S.7 scraper, with a 21-cu. yd. capacity, is now being manufactured. Machines of almost similar dimensions have been used extensively in the U.S.A. for railway construction.

The ideal combination, it is suggested by the manufacturers, is to have a team of perhaps three such units with a heavy crawler for push loading. With a good operator at the controls, the surface of the cut after loading can be extremely flat. On time tests, loading has been calculated at 1.35 min. per unit.

Rubber-tyred scrapers are essentially "carry" scrapers; that is, they can remove earth from one location to fill declivities on the operation site.

The complete unit is made up of two major parts, the tractor and scraper. The tractor chassis is an all-welded unit of box section rails with complete underbelly cladding of welded plates. Steel plate doors are set-screwed into the belly plates for access to the engine sump.

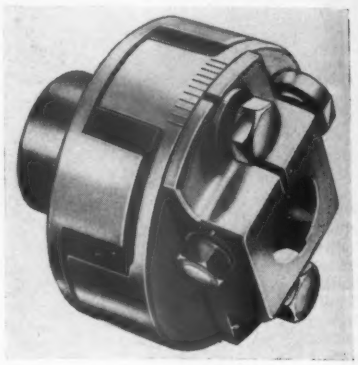
The engine is mounted offset behind the radiator and grill and torque is transferred from the engine flywheel through a flexible coupling to the front drive line. The front drive line, flange-mounted at both ends, transfers torque to an Allison 5640 transmission box. This assembly contains in the one casing, a torque converter, a hydraulically operated planetary pre-selector gearbox, and a transfer gearcase. The axle housing is an integral welded assembly and forms a rigid member with the chassis. On top of the banjo housing a heavy cast steering trunnion is pin-mounted. Steering is controlled by a normal type steering wheel which is used merely as a control on the steering valve piston.

The scraper is an all-welded assembly and consists of a bowl, apron and ejector. The last-named in hinged to the bottom of the bowl and is actuated by a three-stage single-acting jack mounted between the ejector and rear tailpiece. The bowl is lifted and lowered by two lift rods and levers which are actuated by two one stage single acting jacks. The apron is lifted through a cable and sheave. Leverage is through a similar jack as for bowl actuation.

Cutting edges consist of four reversible sections which allow various arrangements for cutting different materials.

Leading dimensions of the unit include: wheelbase, drive to scraper axle, 25 ft. 3 in.; overall length, 40 ft. 9 in.; overall width, 11 ft. 7 in.; apron opening, 7 ft. 3 in.; width of cutting edge 10 ft.; maximum depth of cut 1 ft. 1½ in.; maximum depth of spread, 2 ft. 2½ in.

Further particulars of the S.7 scraper can be obtained from Euclid (Great Britain) Limited, Newhouse Industrial Estate, Motherwell, Lanarkshire.

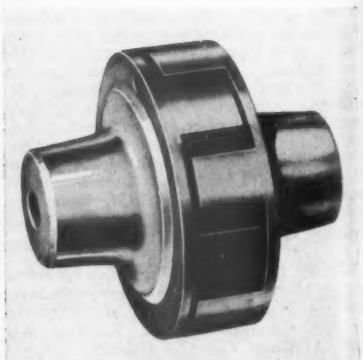


Flexible Couplings

A RANGE of flexible couplings which appear suitable for fuel injection pump and exhauster drives for railcars besides road vehicles and general auxiliary applications is based on steel construction with an oil-proof synthetic rubber insert. The couplings are flexible, free from backlash and capable of taking up radial misalignment up to 0.010 in. The upper illustration is of the fuel pump and the other of the industrial type of coupling.

The driving dogs are accurately machined in relation to the bores, ensuring concentric rotation and the rubber insert which cushions the drive gives completely silent operation.

The fuel pump drive coupling is adjustable to allow for timing the point of injection to the engine. The exhauster coupling is sufficiently robust to cope with



the combined load of the exhauster and the fuel pump when driven in tandem.

The industrial coupling for auxiliary drives is produced with a standard ½-in. bore accurately positioned in both drive and driven halves to permit increase of the bore to the necessary dimensions by machining; the standard ½-in. bore being used as a guide for this purpose.

Typical capacities of 6-20 lb. ft. can be accommodated by the various models of the three basic units.

The couplings are manufactured by Simms Motor Units Limited, Finchley, London, N.2.

Portable Vacuum Cleaner

A PORTABLE vacuum cleaner known as the Port-a-vac is suitable for cleaning the interiors of railway coaches, buses, and so on. It is designed to enable cleaning to be done in places normally inaccessible, for example, ceilings, luggage racks, backs of seats, and lighting fittings. The equipment consists of a hose, a suction tool and a dust bag, and a strong canvas harness. The cleaner is powered by a standard portable blower by the manufacturer.

The light harness fits over the operator's shoulders and can be adjusted according, inter alia, as he is right- or left-handed. The operator is thus enabled to use both hands on ladders, and so on.

With the addition of special lightweight extension tubes, the operator can clean awkward places or gain extra height.

The blower is fitted into a steel elbow piece on the harness, and a security screw is tightened by hand. The suction tool with the hose is also fitted into part of the elbow piece and the mouth-piece of the dust bag is screwed onto the blower outlet.

After the Port-a-vac has been adjusted, the blower lead is connected to a suitable supply, and the cleaner is ready for immediate action. The operator can reach the blower switch, and can attach and detach the bag and the hose coupling in the working position. It is available with either a standard suction tool or a combined brush and suction tool.

The Port-a-vac is manufactured by the Martindale Westmorland Electric Co. Ltd., Westmorland Road, London, N.W.9.

Grinding Wheel Dressing Fixture

THE Model ADS.920 angle and relief dressing fixture has been added to the range of Endia wheel dressing equipment. It is designed to be applied to cylindrical grinding machines, for dressing angular faces for taper grinding, and relieving the sides of grinding wheels for grinding shouldered components.

A precision dovetail slide, mounted by spigot to a rectangular base, can be set and locked at any angle by reference to the integral protractor. The slide is lever operated and has a stroke of 2 in.

Two diamond stations enable taper form or relief dressing either side of the wheel to be carried out. These stations are arranged in angular disposition relative to the slide axis, affording easy maintenance and use of diamond edges. The front and rear edges of the rectangular base are ground square to the slide axis when set at the protractor zero, so that these edges can be used for alignment on any support on the machine.

The base of the fixture is 3½ in. × 4½ in., the length of the dovetail slide is 6 in., and the height to the diamond axis is 2⅛ in.

A base model B.921, shown in the illustration, is also available. It is designed for applying the unit between centres of the machine. It is fitted with a spirit level to facilitate the correct horizontal application to the wheel, and holes are provided to take ½ in. dia. support bars reaching down to the machine table surface.

Where the fixture can be allocated to one machine, an auxiliary base can be supplied to mount the unit directly on to the table of the machine.

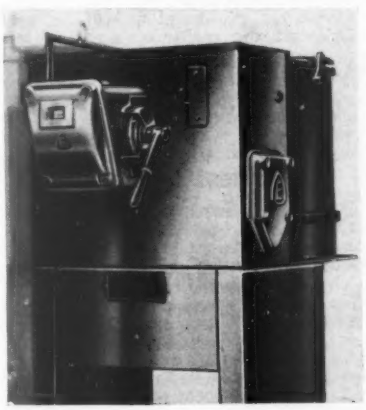
Attached to the base, the unit has a height to diamond axis of 3⅛ in. and the overall length is 12 in.

The dressing fixture is manufactured by Engineering Diamonds Limited, 26, Warwick Row, Coventry.

Improved Switchgear

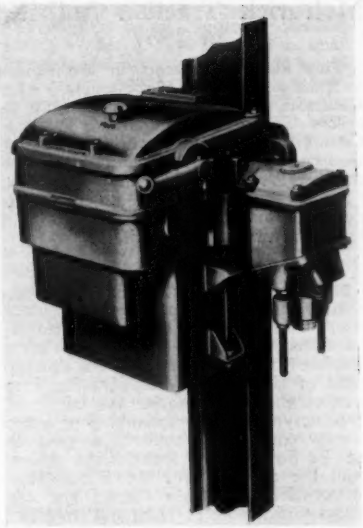
TWO items of switchgear which have recently been developed are an 11-kv. oil switch, and a circuit breaker and direct-to-line starter for voltages of up to 660. Both items are illustrated.

The 11-kV. triple-pole switch (tested to B.S. 2631:1955) is suitable for service



with oil-filled circuit breaker units. The normal current is 400 A.; breaking current 400 A., and the making capacity 250 MVA.

The switch is manually operated by charging and releasing a spring with one movement of the handle; "making" and "breaking" are both independent of the operator. Blade type contacts give a single break per pole.

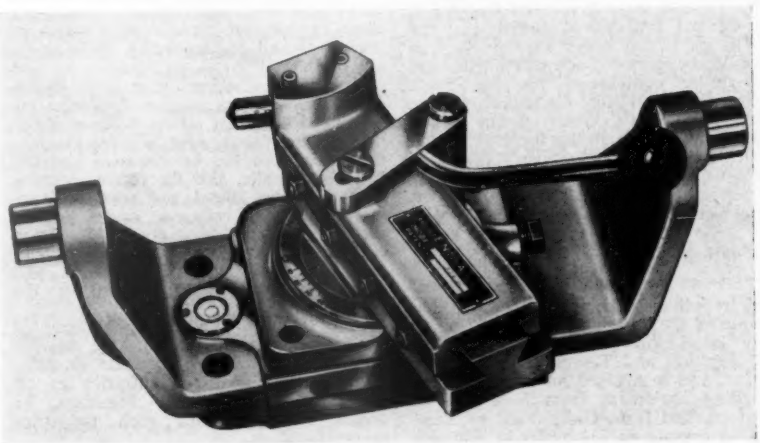


The design embodies interlocking arrangements ensuring that: the angles of movement from "on" to "off" (or "test") and from "off" (or "test") to "earth" are equal; the isolator cannot be moved directly between "on" and "earth" as the handle must be removed in the "off" (or "test") position and re-inserted in its second position before the second half of the movement can be made.

An interlock ensures that the switch must be in the "earth" position before the test sockets can be exposed and the switch is then locked in this position until the test sticks are inserted.

The other item is a Geof 400 A. circuit breaker, tested to B.S.936.1940, which has a breaking capacity of 25 MVA. at 400 V. and 37·5 MVA. at 660 V. It is suitable for mounting to wall or stanchion. There are individually reversible contacts; trip-free handle; cushioning of the contact mechanism; and solenoid-operated releases with oil dashpot time-lags. This circuit breaker is particularly suitable for sequence interlocking and can be fitted with auxiliary switches, non-close device, and electrical interlock.

The switchgear is manufactured by George Ellison Limited, Perry Barr, Birmingham, 22B.



Metrovick Traction Activities in 1957

Two important events in the railway traction work of the Metropolitan-Vickers Electrical Co. Ltd. during 1957 were the orders received from the British Transport Commission in connection with the modernisation programme, and the contract awarded to the company by the South African Railways for 135 "5E" class electric locomotives, the largest order of its kind ever placed in Britain.

Progress in 50-Cycle Equipment

Much valuable information has been obtained from the experimental operation of a 50-cycle a.c. equipment on the Lancaster-Morecambe-Heysham line of the London Midland Region, and the development of single-anode rectifiers for locomotives and motor coaches has continued. A prototype is being assembled of a new 39-step changer in connection with the ten Bo-Bo 50-cycle locomotives ordered from the company for the Euston-Manchester-Liverpool main lines. The tap-changer incorporates resistance transition and air-break contactors as diverter switches. Single-phase transformers being constructed for these locomotives are rated at 3,600 kVA. and secondary-voltage variation (1,270-0-1,270 volts) will be obtained by an auto-regulator mounted in the same tank. Transformers for the 91 three-coach units which the company is equipping for the Glasgow suburban 50-cycle electrification are 870-kVA. units with tapped secondaries. A series-parallel switch operated by compressed air has been developed for the primaries to allow operation on the two supply voltages.

An all-static and fully-magnetic voltage regulation scheme has been developed for battery charging and auxiliary supplies in 25 kV., 50-cycle rolling stock and locomotives; the equipment is able to maintain and provide a maximum d.c. output of 12 kW. within + or − 2 per cent in one second. The company also has in hand two 7·5 MVA., single-phase, 132/25-kV. transformers with 14 high-voltage tappings and on-load tap-changing gear for railway bulk supplies.

Overseas Orders

In addition to receiving the South African order mentioned above, the company has completed delivery of the 40 Co+Co locomotives for the Sydney-Lithgow electrification of the New South Wales Government Railways, and 60 out of 80 motor coach equipments for the same administration have been completed. Fifty 3-coach units have been shipped to the Central Railway of Brazil, and the first items of an order for 105 sets of 3,000-V. d.c. motor coach equipments and 244 trailer equipments for the South African Railways Reef electrification have been despatched. Other motor coach equipments include 34 sets for the Calcutta electrification of the Eastern Railway of India. Coras Iompair Eireann now has in service 32 Metrovick Bo-Bo 550-h.p. diesel-electric locomotives, together with 60 Co-Co of 1,200 h.p. delivered under the same contract.

Signalling

Metropolitan-Vickers-G.R.S. Ltd. has completed the installations of NX route-relay interlocking equipment at Copper Mill junction and Temple Mills, Eastern Region, and is engaged on converting the signalling equipment from Mile End to Stratford, and from Gidea Park to Shenfield, to operate on 83⅓ cycles in readiness for the Region's 50-cycle electrification.

In the Southern Region of British Railways, M.-V.-G.R.S. is responsible for colour-light signalling, including a NX route-relay interlocking, on the Teynham-Ramsgate section of the East Kent electrification.

Other NX installations, including one with Synchrostep remote control facilities, are approaching completion on the South African Railways, and work is well advanced on C.T.C. for the Livingstone-Zimba and Thomson Junction—Livingstone sections of the Rhodesia Railways. An order has been received from Rhodesia for complete C.T.C. equipment to extend from Zimba to Ndola, a distance of nearly 500 miles. A Synchrostep installation has been ordered by the Malayan Railway for controlling a crossing loop midway between two stations 20 miles apart.

Equipment has been developed for a pick-up type of track circuit operating on 10,000 to 20,000 cycles, in which no insulated rail joints are employed. This can be superimposed on an ordinary type of track circuit without interfering with the efficiency of either.

British Railways, Western Region, has ordered equipment for a new marshalling yard at Margam, South Wales, which will be larger than the one at Thornton, Scottish Region, opened last year. Radio equipment operating on the Doppler principle, as at Thornton, will be used to measure the speeds of wagons while approaching and progressing through the retarders.

Institute of Transport Annual Dinner

The annual dinner of the Institute of Transport was held at the Dorchester, London, on March 21. Sir Reginald Wilson, President of the Institute, was in the chair, and some 650 Members and their ladies and guests were present.

Sir Reginald Wilson, after proposing the Loyal Toast, welcomed the guests. He announced that Major-General G. N. Russell, General Manager & Chairman of the Board of Management of British Road Services, had been elected President of the Institute for 1958-59. He then proposed the health of "Her Majesty's Ministers, past and present."

Mr. Harold Watkinson, Minister of Transport & Civil Aviation, replying, referred to the continuity of Government policy as to transport, which was "Transport's turn now," and activity in promoting plans for improving the various means of transport and in according freedom in use of them.

The modernisation plan for British Railways, he added, must be fulfilled. He welcomed the great efforts being made to decentralise management to bring the railways closer to the businessman and the travelling public, also the recent manning agreement for diesel and electric locomotives. The railways must provide greater service at least cost. By being efficient and alert to new ideas, they could ensure the well-being of their staff, who would gain by implementation of the modernisation plan.

Lord Pakenham, a former Minister of Civil Aviation, also replied. He referred to the importance of adequate financial return on nationalised industries as an indication of efficiency. Ministers, he added, should accord such industries proper freedom.

Others present were:—

The High Commissioner for Australia; the Ambassador for the Republic of Ireland; the Agent for the Government of Northern Ireland;

Messrs. L. B. Alexander; J. W. Bannard; D. S. M. Barrie; David Blee; J. Bonham-Carter; C. T. Brunner; J. B. Burnell;

F. L. Castle; A. L. Castleman; H. R. Caulfield-Giles; B. W. C. Cooke; L. W. Cox; F. W. Crews; J. W. Dedman; Sir John Elliot; Mr. G. F. Fiennes;

Sir Ronald Garrett; Messrs. K. Granville; P. N. Gray; A. G. Griffiths; A. E. Hammett; C. M. Hannoyer; B. H. Harbour; F. D. M. Harding; L. C. Hawkins; C. P. Hopkins; E. S. Hunt;

Sir Gilmour Jenkins; Mr. H. C. Johnson; Sir Arthur Kirby; Messrs. C. F. Klapper; D. R. Lamb; D. McKenna; Brigadier-General Sir H. Osborne Mance; Messrs. A. G. Marsden; P. G. Masefield; E. J. Morris;

Mr. Airey Neave; Sir John Nott-Bower; Mr. J. Ratter; Lt.-Colonel A. W. Reed; Mr. R. M. Robbins; Sir Brian Robertson; Messrs. R. D. Ropner; T. W. Royle; Lord Rusholme; Major-General G. N. Russell;

Mr. L. M. Sayers; Viscount Simon; Messrs. S. B. Taylor; W. G. Thorpe; A. B. B. Valentine; J. Vidal; Brigadier A. E. M. Walter; Sir Philip Warter; Messrs. J. W. Watkins; A. J. Webb; Sir Cecil Weir; Messrs. H. A. A. While; E. G. Whitaker; C. E. Whitworth; J. S. Wills; P. Yorke.

Recorded Voice for Southern Region Enquiry Bureau

A robot voice which advises callers that the British Railways, Southern Region central train enquiry bureau is temporarily engaged came into action at Waterloo Station this week.

The recorded voice is played automatically to callers when all the staff in the bureau are already busy answering telephone enquiries. It tells them to hold on and that their calls will be automatically put through as soon as a line is clear.

The bureau, which answers telephone enquiries about train services for most of the Greater London area, normally deals with enquirers rapidly, but there are times when there are sudden surges of calls and all the staff are for a short time busy. When this happens callers who ring Waterloo 5100, the Southern Region private exchange which serves the inner London stations, are connected to a special magazine. This magazine stores up to 50 calls and passes them through in turn to the bureau as soon as one of its telephones is free. The waiting caller hears a new ringing tone and often thinks it means that the line has been disconnected.

The new robot voice will be switched in to replace this ringing tone whenever there is a likelihood of longish delays and will prevent people wasting money by making fresh calls in error.

The standard announcement will be in the following terms:—"I am sorry to keep you waiting but all the telephones in the enquiry bureau are, for the moment, engaged. Please hold on and you will be put through automatically to the first one that is free. This is a recorded announcement."

The new equipment consists of two voice-recording machines, one in use and one in reserve, fitted with repeating apparatus which allows the playing arm to be perpetually transferred from the end of the recording to the commencement.

It is intended to bring this new equipment into use at all times when the period

of waiting in the magazine is likely to exceed half a minute; up to this time the ringing tone will be heard as in the past.

The scheme was developed by Siemens Edison Swan Limited from information supplied by G.P.O. engineers. Other installations were carried out by the staff of the Signal Engineer, Southern Region, Mr. L. J. Boucher.

Questions in Parliament

Interest on Advances to the B.T.C.

Mr. Ernest Davies (Enfield E.—Lab.) asked the Minister of Transport & Civil Aviation on March 17 what rate of interest he had directed the B.T.C. to pay on advances so far made under Section 2(1) of the Transport (Railway Finances) Act, 1957.

Mr. Harold Watkinson, in a written reply: I have issued a direction that interest on the advances made during the year ended 31st March, 1957, should be at the rate of 5 per cent.

Parliamentary Notes

Automatic Train Control

On the motion for the adjournment in the House of Commons on March 7, Mr. Philip Goodhart (Beckenham—C.) raised the question of A.T.C. He said the story of safety on the railways was a good one, but the chapter on automatic train control made curious reading. Soon after the turn of the century a number of bright young men developed A.T.C. on the Great Western Railway. With nationalisation many people thought that jealousy would be swept away and that A.T.C. would become general.

"After eight years of nationalisation," he added, "we are proposing to ask approval of a system as good as that on the Great Western." He considered that an incredible performance. Trials had recently been put in hand on an electrified line, and perhaps they would work out well. But, as far as he knew, there was not at the moment any plan to bring any protection to electric trains by A.T.C. in the foreseeable future. A long time had elapsed. Either there had been massive inefficiency on the part of the B.T.C. or that there had been a decision by responsible men that the installing of A.T.C. was not really as urgent as many people thought, and they had been fobbing off Ministers with a lot of soft soap. He imagined that both considerations applied. Now he understood that there was a shortage of staff on British Railways on the installation side for A.T.C. Would the B.T.C. consider approaching the Area Electricity Boards? At least one senior executive of one Area Board had seen the new A.T.C. in operation, and he had reported his Area Board could very easily handle the widespread installation of this system.

"At the moment, one man does stand in the dock," concluded Mr. Goodhart. "On the moral issue, perhaps he should not stand alone."

Mr. G. R. H. Nugent, Joint Parliamentary Secretary to the Ministry of Transport and Civil Aviation, congratulated Mr. Goodhart on his enthusiasm for this topic, but he could not agree with all his conclusions. In the past 46 years there had been 698 formal inquiries into rail accidents involving 1,599 people killed —equivalent to an average of four months' fatalities on the roads. In the judgment of experts, about 11 per cent of these accidents could have been avoided if A.T.C. of the warning type had been fitted, and if 11 per cent of accidents had been saved, about 31 per cent of the fatalities would have been avoided, because A.T.C., especially as it reduced the danger of an accident happening at high speed, tended to save the accident with very heavy casualties. The figure helped to put into perspective the rest of what A.T.C. did.

Mr. Nugent then gave a brief explanation of A.T.C., of the train stop used on the London Underground, and of track circuiting.

Despite the shock of the Lewisham accident, he continued, the colour-light system, which had been operating on that area of line, which carries the densest traffic in the world, has had an accident-free record for nearly 30 years.

That served to put in perspective what A.T.C. did, Mr. Nugent stated. It was extremely valuable, but it was by no means the essential safety measure. The B.T.C. made a policy decision in 1948 that in the interests of safety it would make a wide extension of the A.T.C., colour-light signals, and track circuits. The A.T.C. design, it was decided, was to be the one which would combine the best of both the Great Western Railway system and the Hudd non-contact magnetic system. The G.W.R. system, admirable as it was for a steam line, was not entirely suitable for an electric line. There was a risk with an electric line of stray currents giving a false signal in the cab by energising the alarm, which was worked magnetically. Furthermore, electric trains did not have sufficient clearance between the A.T.C. ramps and the undercarriage. Finally, the heavy mechanised parts of the G.W.R. contact system were by no means ideal to be made permanent and universal throughout the country.

The B.T.C. was convinced that it could find a non-contact magnetic system better than the Hudd system, which would finally be better all round. In 1949, initial trials were carried out, and from 1950 onwards full-scale trials were carried out on the East Coast line. The Hudd system took 10 years to establish. He was reliably assured that 7½ years was by no means an excessive time to "get the bugs out of" a new system of this sort. It had to operate in all weathers, and it had to operate infallibly. It was certainly tried out on the four-rail electric line, and it would very shortly be fully converted to the third-rail system, too.

The suggestion by Mr. Goodhart that the Electricity Board could take over part of the work of installation conflicted with the general policy of the railways that their rail signal engineers never allowed outside contractors to do work on the existing systems where the lines were in operation.

Nationalised Industries Loans Bill

The Nationalised Industries Loans Bill extends until August, 1958, the powers given by Section 42 of the Finance Act, 1956, which provided for the making of advances (not to exceed a total of £700 m.) from the Exchequer, through the Ministers concerned, to seven nationalised industries. The purpose is only to extend the limit of time within the existing powers can be exercised so that the future of all methods of financing the nationalised industries may be considered in the context of the general review of economic policy.

In moving the second reading of the Bill on March 12, Mr. J. E. S. Simon, Financial Secretary to the Treasury, said: "It would follow that any necessary provision should be included in the Finance Bill (after the Budget), so that the House will then have a full opportunity to discuss the Government's proposal."

The Opposition officially gave "this minor interim" Bill general support.

Mr. Ernest Davies (Enfield E.—Lab.) referred to the B.T.C. as a case where it would be most undesirable to compel the Commission to go to the market to raise the capital it requires. To depart from Government finance for the Transport Commission in particular would gravely endanger its financial position, and would cause further deterioration in its finances. For that reason, among others, he very much regretted that in introducing this Bill the Government had decided to put a five-months limit on it. By imposing a limit, the Government were prejudging the situation and were prejudicing the position.

Mr. J. Grimond (Orkney & Shetland—Lib.) asked what the Government would do about the deficit accumulated by the B.T.C. There was a strong case for an investment board which would relate the demands of the nationalised industries one to another and to the demands of private industry. It could then advise the Treasury and the House whether they were spending too much on the railways as against the roads, or too much on the coal industry as against electricity.

Viscount Hinchingbrooke (Dorset S.—C.), supporting the Bill because "of the signs and portents which surround it," said he had held the view for some time that a drastic re-organisation of the railways, which were losing millions a year and were quite unprofitable, ought to take place.

Broadly speaking, it would be that the transport stock would be taken over by the Treasury and brought into the Consolidated Fund, with the name changed, while at the same time the physical asset of the permanent would be taken over. After that, it would immediately become interesting to send the Regional boards to the market for sufficient finance for capital improvement schemes, as they would immediately become credit-worthy on their current earnings and would probably be able to get large sums on the market at a premium. The Government must have something in mind. "It is fairly clear that we must expect a fairly tremendous piece of news in the Budget," which would be tantamount to a new savings policy which would enable the nationalised industries to go to the market and be supplied with savings of the workers when the time came at the end of August.

Mr. Simon, Financial Secretary to the Treasury, replying to the debate, described Mr. Grimond's investment board idea as "that archtypal image," which arose in the Liberal Yellow book. The present system had worked better, and bank overdrafts had been substantially reduced and had made an important contribution to the general disinflationary policy of the Government. To go back on the former system, whereby the banks were called upon to make large new advances to the nationalised industries, would in no way fit with the policy announced by Mr. Thorneycroft on 19th September last. There were "no signs and portents" surrounding the Bill. It was simply a holding operation, so that the Chancellor of the Exchequer could unfold his plans in the proper context.

Staff and Labour Matters

Railwaymen's Wage Claims

Continuation of reply by Mr. A. B. B. Valentine before Railway Staff National Tribunal

Continuing his reply on the third day, March 19, of the hearing before the Railway Staff National Tribunal of the claims of the three railway trade unions, the N.U.R., A.S.L.E.F., and T.S.S.A., for improved rates of pay for railway salaried and conciliation staff, Mr. A. B. B. Valentine, a Member of the B.T.C., explained the several reasons why the Commission considered that to increase salaries and wages at this juncture in order to offset the increases in the Retail Prices Index since the last settlement a year ago, or indeed for any other reason, would be disastrous to the prospects of the railway industry and the interests of the men and women represented by the three unions. These reasons fell into two main parts, those relating to the financial position of the Commission and the railways in particular, and those relating to the broader economic consequences of a wage increase at this time.

Mr. Valentine stated that in 1956 the Commission, at the request of the Government, prepared a review of its policy and prospects, published as part of the Government White Paper of October, 1956, entitled "Proposals for the Railways." The conclusion was reached that, with the help of the physical modernisation of the railways that was in progress, the use of more flexible charging powers which had been granted, and the steady development of productivity, the railways should be able to overcome their financial difficulties and eventually reach a position of considerable financial strength.

The intervening years of reconstruction were, however, a problem and the Commission urged that a financial plan should be adopted which, while avoiding subsidy, would place the organisation on a firm, sound basis during these critical years. The Government concluded that it would be sound financially to provide the Commission with the further finance required to tide over this period. It was, accordingly, a major policy objective of the Commission to put its finances and in particular the finances of British Railways on a firm foundation within a short period of years.

Borrowing by B.T.C.

The Transport (Railway Finances) Act, 1957, was passed to give legislative effect to the Government proposals. The Government had undertaken to finance the Commission deficits within a statutory maximum of £250 million in the seven years from 1956 to 1962, and all these advances must be subsequently repaid out of the surpluses expected after 1962. Meanwhile, the Commission was bound to keep its deficits for the seven years within the limit of £250 million which could be borrowed to finance them. The amount of these borowings year by year during the period were not precisely laid down but were broadly implied by the curve shown at the bottom of Appendix D of the White Paper and the Commission must conform with the general pattern shown by this curve if it was to achieve the objective of placing the undertaking on a sound financial basis and to pay its way by 1961 or 1962. Nor during these years must it let the aggregate deficits exceed the amount of finance which the Government had agreed to provide for this reconstruction period.

In 1956 the amount borrowed under the Transport (Railway Finances) Act of 1957 was £54·4 million, roughly one-fifth of the maximum sum of £250 million referred to earlier. The year 1957 was an unsatisfactory one financially on British Railways. Expenses were considerably higher, mainly as a result of the increase of salaries and wages arising from the settlement charges. There was a tendency for freight traffic to fall and the year's results would have been worse had it not been for a non-recurrent windfall in the shape of additional traffic during the Suez situation.

Mr. Valentine said that while the audited figures for 1957 were not yet available, the deficit for that year would be some millions higher than was implied in the White Paper curve, so that the borrowings of the Commission to meet the 1957 deficit would be larger than was originally contemplated and to that extent there would be less available out of the total maximum amount of £250 million to finance deficits in later years.

To keep in line with the White Paper estimates, they had had to set a target for British Railways which involved reductions of some millions of pounds in the amount of working expenses which had been contemplated. Expenditure on maintenance and repair would have to be curtailed or deferred, and in all departments at every practicable point manpower, which accounts for over 60 per cent of railway expenses, would have to be reduced. Some curtailments of services might be inevitable, though mainly, it was hoped, confined to those which were in step with falling traffics, particularly freight.

"Imprudent" Economy Measures

All these measures, he went on, were needed to keep the Commission financial position in line with the White Paper objectives. If salaries and wages were increased, the only course would be to make further economies of kinds that would be imprudent and bring greater evils in their train, by inadequate expenditures on upkeep and by further reductions of services to a level at which there would be a likelihood of losing customers.

He made it clear that the financial objectives had not been altered by the Government pronouncement last October in which the then Chancellor of the Exchequer, in a context that had some reference to wage increases, referred to the limitations placed upon advances to be made to the Commission. The overall limitations on the Commission's borrowings to finance deficits derived directly from the Transport (Railway Finances) Act of 1957 which received Royal Assent in February, 1957, and they were not affected by any words used by the Chancellor in Parliament in the debates of last October.

Charges

As to charges, Mr. Valentine said before the new merchandise charges scheme, introduced on July 1, 1957, came into operation, costs had increased to such an extent that it became necessary to increase the maximum charges by 10 per cent as from August 1. On the passenger side, applications for higher charging powers were made to the Transport Tribunal in April, 1957, quickly following the last wage settlement, and were granted in August.

Higher Charges Impracticable

After increasing freight charges as recently as last August and passenger fares in September, it was highly questionable whether much further revenue could be obtained by increasing them again in the near future. Competition on the freight side was fierce and both freight and passenger traffic were continually exposed to the increasing use of private transport—"C" licence vehicles and private cars. It was hard to say how much additional money was secured by the increases in charges last year, but it was known that it was impossible, owing to competition, to secure any increase at all over a large range of freight traffics, while in many other cases the increase actually secured was considerably less than the full 10 per cent.

Railway charges were in real terms considerably lower than prewar. While the average price of all goods and services had risen by 180 per cent, average charges per passenger-mile and per ton-mile on British Railways had respectively increased since 1938 only by 115 per cent and 158 per cent.

The possibility of modestly increasing the receipts from passenger traffic by again imposing higher charges was not necessarily so remote, but might well be commercially unwise. The recent experience of bus undertakings, which had lost and were losing very large numbers of passengers, might well apply to the railways. In any event, a contribution from this source could not go far to solve the problems, as passenger traffic yielded barely more than one-quarter of total railway revenue.

The most important consideration was, however, that although it might be held to be practicable and commercially prudent to obtain additional receipts in 1958 from higher charges, they were already badly needed to help to keep the deficit this year within the maximum limit, at the present level of costs, and would not be available for meeting increased costs, whether for wages or anything else.

If salaries and wages were increased the cost could only be met by drastic and damaging curtailment of activities and services, which would be contrary to the interest of the railways and the staff who served them, and contrary to the interests of the customer and of the country.

Effect of Railway Pay Increase

Turning to the wider economic aspect, Mr. Valentine submitted that, even if the Commission were not passing through this acutely difficult phase, the economic consequences of a salary and wage increase, whether designed to improve the relationship of railway rates of pay to those of other industries or intended to offset the increased cost of living, would be fatal at this time. Although several times in recent years the rates of pay of railway

staff had been increased by a percentage more than equal to the percentage increase in the Retail Prices Index, with these objects, the process had proved largely self-defeating.

The attention of the Tribunal was directed to the inevitable consequences upon the standard of living of railway staff if there were another round of wage increases, which an increase for Railwaymen would start. If railways salaries and wages were raised again now, with the inevitable consequences on other wages, the same unprofitable cycle would surely and certainly recur in 1958 as had occurred in previous years.

In urging the Tribunal to find that railway salaries and wages should not be increased at this time, Mr. Valentine summed up his arguments as follows:—

1. The contention that railway salaries and wages, or earnings, are too low compared with those in other industries had not been established; on the contrary in the last three years they had been three times substantially improved and could no longer be said to be lagging behind.

2. There was no case for any general increase of railway salaries and wages because of any special difficulties experienced in the labour market. On the contrary, the railways were feeling rather less than others the difficulties of recruiting and retaining staff which were common to practically all employers in a time of full employment.

3. The increase in the cost of living at this date since the last favourable settlement was made 12 months ago was only 3.2 per cent.

4. An increase of pay at this time is an attempt to restore the purchasing power of the staff to the level prevailing last March would be largely self-defeating, because it would inevitably give rise to a general round of wage increases causing in turn a further rise in prices.

5. It would be worse than self defeating because it would seriously endanger the prospects of the railways and the best interests of railway staff. Commercially, the prospect of gaining further revenue by higher charges was both small and uncertain. If the wages bill were increased, the Commission would be forced to make cuts in expenditure and services which would be likely to lose traffic to the permanent and serious damage of their business. Such a blow to the future prospects of the railways would be a tragic outcome to the staff.

6. An increase of railway salaries and wages at this juncture would destroy another prospect, perhaps less certain at the moment, but quite real, that prices might keep steady, or fall, if only nothing were done to touch off another futile round of rising wages and prices.

A.S.L.E.F. Claim for Shorter Week

The hearing took place before the Railway Staff National Tribunal on March 21 of the claim of the A.S.L.E.F. for a 41-hr. week to be substituted for the 88-hr. fortnight now operating for railway locomotive grades.

Mr. Hallworth, General Secretary, presenting the case for the A.S.L.E.F., stated that the claim was based on four main points:—

1. The Society contends that the intensification and responsibilities of train working necessitate that footplate staff shall have a day's rest from duty each week.

2. The exceptional circumstances surrounding the railway transport service justify the claim.

3. The staff are entitled to a shorter working week as a basic requirement in absorbing the large numbers of men who will be made redundant arising from the modernisation plan.

4. The greater production obtaining completely justifies it.

Mr. Hallworth said that the additional day's rest was sought because of the incidence of shift working and the lack of that proper degree of family and social life generally enjoyed by those in outside industry; it was not the desire to obtain a 41-hr. week so that the men could earn extra money by working overtime.

The reply on behalf of the B.T.C. was given by Mr. W. P. Allen, Manpower Adviser. He stated that if the claim were conceded it would involve the employment of several thousand more men to do no more than maintain existing services, and would mean a general reduction in output per man, which was a situation the Commission could not face.

It would in all probability defeat the objective of the modernisation plan and would hinder the realisation of the aim that railways would begin to pay their way by 1962. Any additional expenditure involved by lowering the weekly hours of work would add to the working costs of British Railways, 60 per cent. of which was in respect of salaries and wages. The claim was quite unrealistic, and the Commission ought not to be asked to meet the cost of a concession of this sort to a comparatively small but important section of its staff and by so doing indirectly create a precedent and an economic condition in Great Britain which the major industries of the country could not meet.

The cost of meeting the claim for footplate staff alone was estimated to be £3,800,000 a year, but if the principle were conceded, repercussions on all other sections of railway staff would be unavoidable, to say nothing of the effect on the wages grades in other of the nationalized transport services.

London Busmen's Claim

A delegate conference representing London Transport bus, trolleybus, and coach workers decided by a large majority on March 25 to seek authority of the Executive Committee of the Transport & General Workers' Union for industrial action to be taken in connection with their claim, and the recent award by the Industrial Court of a further 8s. 6d. a week to London men only; the conference voted in favour of powers "to take every step necessary to achieve an increase of 10s. 6d. a week for all London Transport bus workers." The T.G.W.U. Finance & General Purposes Committee is to discuss this matter on April 3. The executive of the London District of the N.U.R., which includes employees of London Transport railways, passed a resolution "pledging support to the busmen in their wages fight."

Contracts and Tenders

Freight and livestock wagons for Pakistan and South Africa

R. Y. Pickering & Co. Ltd. has received an order from Pakistan for 1,364 covered wagons and 400 livestock wagons of standard four-wheel design. The total value of the order will be in excess of £2,000,000. Delivery will commence in five months' time and thereafter will be at the rate of 300/350 vehicles a month.

South African Railways have placed orders with Wegmann & Company of Kassel, Germany, for 2,000 livestock wagons at a total cost of £2,252,500, and with Dorman Long (Africa) Limited, for 1,500 livestock wagons, and 500 bogie fruit wagons at a total cost of £2,097,000.

Kisha Seizo Kaisha, of Osaka, has received an order from the Japanese National Railways for 15 double-bogie general-purpose diesel-hydraulic locomotives of 740 b.h.p.

The General Electric Co. Ltd. has received an order for the 1,500-V. d.c. traction equipments for three new four-coach trains and four additional trailer coaches (including one driving trailer) for the Estoril Railway, Portugal. This rolling stock, of stainless steel construction, will be built in Portugal by Sociedades Reunidas de Fabricações Metálicas, Lda. (SOREFAME) of Amadora. Each motor coach in the new trains will be powered by four axle-hung motors with a 1-hr. rating in weak-field of 170 h.p. The motors will be equipped with roller suspension bearings and will drive through Wiseman resilient gearwheels. Control will be by electro-pneumatic contactors, with automatic acceleration, and provision will be made for arresting the progression at an intermediate weak-field notch when working stopping trains. The normal acceleration of a train with all seats occupied will be 1·12 m.p.h.p.s., but it will be possible to select a lower rate when rail conditions make this necessary. Maximum speed will be 56 m.p.h.

British Railways, Eastern Region, have placed the following contracts:—

Tubewrights Limited, London, S.W.1: supply and delivery of 79 50-ft. high standard and two 25-ft. high standard floodlighting towers at Ripple Lane new marshalling yard

Stewart Maggs Limited, Doncaster: supply, delivery, and installation of electric lighting equipment at Sheffield Midland Station

The Globe Boiler & Ship Repairing Co. Ltd., Hull: overhaul of mechanical coaling plant at Doncaster Motive Power Depot

Cubitt & Gotts Limited, Westerfield, Ipswich: provision of shunters' accommodation at Parkeston Quay

Charles R. Price, Doncaster, Yorks: construction of substructure and erection of superstructure of new underline bridge No. 1A over Great North Road between High Dyke Junction and Skillington Junction.

British Railways, North Eastern Region, have placed the following contracts:—

Holmpress Piles Limited, Hull: sinking of test boreholes, Corbridge and Haltwhistle tunnels

Ruston & Hornsby Limited, Lincoln: alternator standby set, Huddersfield Passenger Station

Ridghouse Limited, Aycliffe, near Darlington: fabrication of steelwork for repair pits, Leeds Neville Hill Diesel Depot.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From India:

106 broad (5-ft. 6-in.) gauge diesel shunting locomotives

The tender was first issued on September 23, 1957, and recorded in our issue of September 27, 1957, but was subsequently withdrawn.

The issuing authority is the Indian Railways. The tender No. is G.P.12. The address to which bids should be sent is the Director, Railway Stores, Railway Board, State Entry Road, New Delhi. The closing date is May 12, 1958. The Board of Trade reference is ESB/30199/56.

3,000 axlebox bearings, white metalled, 7 in. by 4 in. journals, W. Rly's drg. No. 135/CAX

780 axlebox bearings, white metalled, 8 in by 4½ in. journals, W. Rly's drg. No. 16/FRD

2,120 axlebox bearings, white metalled, 9 in. by 4½ in. journals, to I.R.S. drg. No. W/802 alt. 13.

The issuing authority is the Director General of Supplies and Disposals. The tender No. is SRI/17769-H/1. Bids should be sent to the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. The closing date is April 8, 1958. The Board of Trade reference is ESB/7690/58.

146 single line tokenless lock and block instruments.

The issuing authority is the Indian Railways. The tender No. is G.P.13. The address to which bids should be sent is the Director, Railway Stores, Ministry of Railways, State Entry Road, New Delhi. The closing date is April 22, 1958. The Board of Trade reference is ESB/7247/58.

From Vietnam:

906,528 steel bolts for fish plates, hexagon Nut-H-20, standard type 30K

906,528 spring washers, steel, for fish plates and clips, standard type 30K

821,104 cast rail clips, standard type 30K

The issuing authority and address to which bids should be sent is the Central Purchasing Authority, P.O. Box 280, Saigon, Vietnam. This purchase will be financed by the International Cooperation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The closing date is May 7, 1958. The Board of Trade reference is ESB/7514/58/I.C.A.

From South Africa:

67 items of connecting and coupling rods, leading, trailing, and intermediate.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. H.6519: Connecting and Coupling Rods" should be addressed to The Chairman of the Tender Board, P.O. Box 7784, Johannesburg. The closing date is March 28, 1958. The Board of Trade reference is ESB/6438/58.

Further details regarding the above tenders, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1).

Notes and News

The Vulcan Foundry Limited.—The increase in fixed assets of the Vulcan Foundry Limited in 1957 was £340,029, and not £240,029, as was stated through a typographical error on page 345 of last week's issue.

Glasgow Suburban Electrification Progress.—The laying of foundations for the overhead wiring system for the Glasgow suburban electrification has been continued this week; work has been carried out between Dalmuir Park and Kilpatrick after the morning and before the evening traffic peaks.

Eastern Region Easter Holiday Arrangements.—During the Easter holiday period, the Eastern Region of British Railways is to run 437 additional trains, 14 more than last year. Many will run from London to serve the West Riding of Yorkshire, Newcastle, Edinburgh, Glasgow, and Aberdeen as well as the principal towns and holiday resorts in East Anglia. Similarly, a large number of extra trains will be run to cater for passengers coming to London and many cross-country services linking the more important provincial towns will be duplicated.

Electric Suburban Trains for S.A.R. Reef Services.—In the article on the electric stock being built for the Reef suburban services of the South African Railways, by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., which appeared in our March 14 issue, the caption of the lower illustration which appeared on page 310 was of the interior of a first class motor coach and not of a first class trailer as stated. The difference between the interiors of a trailer and motor coach is essentially the clerestory ceiling of the latter.

Locomotive Driver Committed for Trial on Manslaughter Charge.—Driver W. Trew, driver of the steam train which ran into the rear of a stationary electric train at Lewisham, Southern Region, on December 4, was committed for trial at the Central Criminal Court from the Magistrates' Court at Greenwich, on March 25, on a charge of the manslaughter of Guard W. R. Reynolds, the guard of the electric train. Driver Trew pleaded not guilty through his counsel, Mr. F. H. Lawton, Q.C. This was the second day of the hearing; the case had been adjourned from March 7, when Mr. Christmas Humphreys, for the prosecution, made his opening submission and called witnesses to give formal evidence.

Ericsson Telephones Limited and Solartron Electronic Group Limited Sales Arrangement.—Mr. J. H. Reed, Managing Director of Ericsson Telephones Limited, and Mr. Eric E. Jones, Group Commercial Director of Solartron Electronic Group Limited, last week made a joint announcement concerning a new arangement which has been entered into by the two concerns under which Solartron will sell certain Ericsson products. The arrangement will have a world-wide scope except in Scandinavia and South Africa, and includes the United Kingdom. It is concerned with the nucleonic and electronic instruments and components manufactured by Ericssons. These include cold cathode tubes and miniature relays. Some instruments to be marketed under the arrangement will be of Solartron design, incorporating Ericsson equipment. These include the Solartron Digicator, an electronic measuring instrument with no moving parts, which takes the place of the conventional swinging pointer dial instrument.

Railway Loan Probable for Rhodesia.—The President of the World Bank, Mr. Eugene Black, has stated that the Federation of Rhodesia & Nyasaland will probably receive in the near future a new World Bank loan for Rhodesia Railways. A mission from the bank has been discussing with the Federal Government an additional loan for railways, which is expected to be arranged in the next two months. Mr. Black has also stated that the bank is about to make its first advance to Nigeria, and that he knows of no area in the world where there are so many possibilities for his bank as the African continent.

Aerial Photography.—Mr. H. M. Pearson and Mr. N. E. V. Viner-Brady, the authors of the paper entitled "Use of Aerial Photography by Railways" which was commented on editorially in our issue of February 7, state that sufficient evidence was received to convince them that the techniques described as being practice on the French and German railways were feasible. They were, however, unable to verify that such systems were in use before going to print although informed that they were so. The authors regret if a wrong impression was conveyed of practices elsewhere although they themselves did express doubts of their practicability.

Electrical Engineers' Exhibition Opened at Earls Court.—Mr. F. J. Erroll, Parliamentary Secretary, Board of Trade, deputising for Sir David Eccles, the President of the Board of Trade, who was indisposed, opened the seventh Electrical Exhibition at Earls Court, London, last Tuesday. In declaring the exhibition open he paid tribute to the export achievements of the British electrical industry. Last year direct exports reached the figure of some £280,000,000. This is about one-quarter of the production of the industry, and is 12 times greater than pre-war in value. The exhibition occupies 450,000 sq. ft. spread over two floors of Earls Court, and there are 400 exhibitors. It closes tomorrow, March 29.

Crewe Pupils' Annual Dinner.—As recorded editorially in this issue, the Crewe Pupils & Apprentices Association held its 51st annual dinner at the Royal Automobile Club, Pall Mall, London, on March 21. Mr. F. S. Bennett presided and the toast "Past and Present Crewe Men" was proposed by Captain William Gregson, C.B.E., Past President of the Institution of Mechanical Engineers. Replies were made by Mr. K. Cantlie on behalf of "Past Crewe Men," and Mr. C. Haward for "Present Crewe Men." Mr. F. S. Bennett proposed the toast to "The Guests" and Mr. R. C. Bond, Chief Mechanical Engineer, British Railways Central Staff, B.T.C., responded. Others present were: Messrs. J. Bardsley, F. Blackburn, W. B. Broadbent, E. R. Brown, the Hon. A. J. Verney Cave, Messrs. V. R. B. Cooke, D. R. Coupe, A. S. Gillitt, K. Grant, R. Gresley, P. D. Hodson, H. G. Ivatt, I. Jones; Professor J. M. Kay; Messrs. J. Ledger, G. A. Lemon, R. C. S. Low, G. H. K. Lund, J. McEver, L. T. Madnani, W. E. K. Mayne, J. P. Metcalfe, R. Metcalfe, H. J. S.

Moyses, T. A. O'Neill, F. Perkins, R. A. Riddles, F. B. Roberts, K. Scott, C. R. H. Simpson; Sir William Stanier Messrs. P. A. Sturgess, G. R. Thompson, T. Tritton, F. H. Wood, and W. E. Yates.

L.T.E. Country Bus and Coach Fares.—From March 30, some fares on certain London Transport country bus and coach routes in the Aylesbury, Amersham, and Tring areas, which were not altered when London Transport fares were increased in September, 1957, are to be raised to conform with the level of charges already applying generally on London Transport services. The increases have been approved by the Traffic Commissioner for the area concerned.

B.E.A.M.A. 1958 Catalogue.—Mr. J. K. Vaughan-Morgan, Minister of State, Board of Trade, speaking at the launching of the British Electrical & Allied Manufacturers Association catalogue for 1958, at the Connaught Rooms, London, last week, said that the electrical industry in Britain had grown enormously in the last 20 years. From £155,000,000 in 1938, the value of its products had risen to nearly £1,300,000,000. The catalogue, he stated, gives some idea of the vast range covered by the industry, from things used daily in the home, through the fittings of shops and offices, up to the tools of industry.

I.C.I. "Plastics in Lighting" Exhibition.—An exhibition entitled "Plastics in Lighting," organised by the Plastic Division of Imperial Chemical Industries Limited, has been held this week in London, and closes tomorrow (Saturday). The first of its kind to be held in this country, it is designed to show lighting engineers, industrial designers and architects the part which I.C.I. plastics play in the manufacture, development and design of modern lighting fittings. It covers almost all aspects of transport, industrial, commercial, street, and domestic lighting. The major part of the exhibition is devoted to the many and varied uses of Perspex but there are also examples of the wide applications now being found for Diakon acrylic powder both for moulded and extruded components and Darvic p.v.c. sheet and foil. Examples of recent designs of lighting fittings for railway stations are on show. There are also some of fittings for transport applications, including rail, which illustrate some of the striking effects which can be obtained when the purely decorative and strictly functional requirements of modern lighting are combined.

Further Western Region "Car Tourist" Services.—British Railways, Western Region, will introduce a "car tourist" service between London and Newton Abbot for the 1958 season, which will supplement the service inaugurated in 1956 between Paddington and St. Austell. This new service will be available each weekday from April 2 to October 11 (except Good Friday and Easter Monday) and the arrangement provides for overnight conveyance of cars, the passenger travelling on selected day trains. Return charges for driver and car, travelling on Tuesdays, Wednesdays, or Thursdays in both directions are: first class £10 17s. 6d., and second class £8 7s. 6d., with £4 16s. for each additional first class and £2 11s 6d. for each additional second class passenger. On Fridays, Saturdays, and Mondays, the second class fare will be £9 7. 6d. for car and driver, and £3 4s. for each additional second class passenger. Return fares for car and driver between Paddington and St. Austell will be £13 10s. first class, £11 second class, with £6 11s. 6d. for each additional first class and £4 7s. 8d. for each additional second class passenger. Reduced second class fares are available for mid-week travel. Charges for sleeping berths are 30s. first class and 12s. second class in each direction.

Bulwell Forest Goods Depot to Close.—British Railways, London Midland Region, announce that Bulwell Forest goods depot, between Daybrook and Newstead, will be closed except for private sidings traffic from April 7. Alternative arrangements will be made for merchandise, minerals, and coal class traffic.

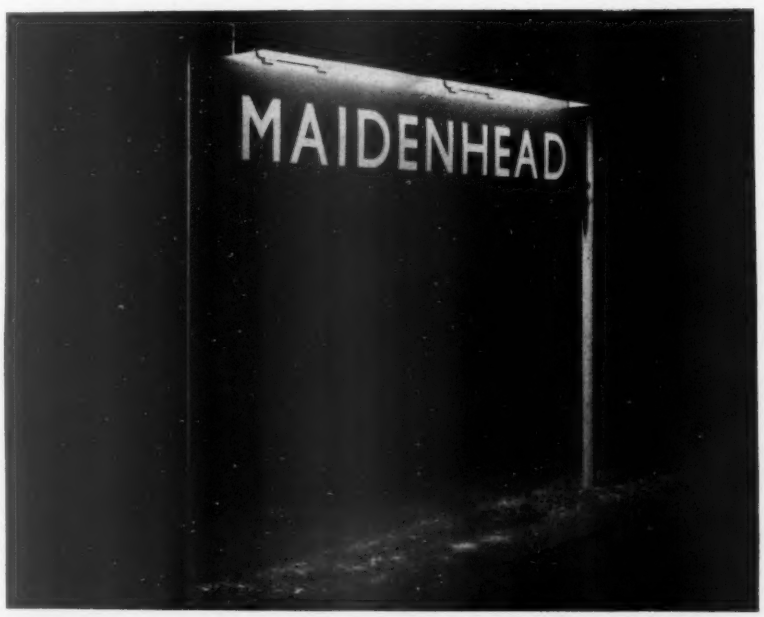
Midland Silicones at A.S.E.E. Exhibition.—The stand of Midland Silicones Limited at the A.S.E.E. Exhibition at Earl's Court, S.W., demonstrates the application of silicone insulants in electrical equipment, and types of silicone materials available. Among the equipment using silicone insulation shown is an 11-kV., 500-kVA., dry-type transformer, and an armature of an electric traction motor. Shown for the first time is a new range of silicone rubbers which will cure at room temperature and are stated to have the electrical properties and thermal endurance of conventional heat-cured silicone rubbers. The development and use of silicone insulation are featured in a film shown on the stand.

New Type of Illuminated Station Name Sign.—A new type of illuminated double-sided large name sign has been installed at Maidenhead Station, Western Region. The name portion of the sign is of the Eroline vitreous enamel pattern and on each side of the sign two 4-ft. 40-W. fluorescent reflector tubes are fixed beneath a vitreous enamelled canopy. The instant start capacitor unit for each tube is concealed between the two nameplates and fitted on a hinged plate, thus facilitating inspection and replacement. Current is conveyed to the lamps by cable inside one of the uprights, thence through the interior of the sign. The manufacturer is Mead McLean Limited, of Brockley, London, S.E.4, to the order of the Public Relations & Publicity Officer, British Railways, Western Region.

Railcars on Trial Runs in Dundee Area.—To prepare for introduction at a later date of diesel passenger services in the Dundee area, trial runs are to be made with diesel railcars between Dundee and Perth; Dundee and Arbroath; Dundee and Tayport; and Dundee, Leuchars Junction, and St. Andrews. The cars will be twin-set vehicles of a similar type to those introduced recently in the Edinburgh suburban area.

B. Elliott & Co. Ltd. Separate Machine Tool Interests.—Because of continued expansion, B. Elliott & Co. Ltd. has reorganised the structure of the group, separating the machine tool interests from its other activities. The subsidiary is to be formed, under the name of B. Elliott (Machinery) Limited, to take over the selling and manufacturing operations now carried on by the present company, leaving the latter as a holding company. Provisional figures for the financial year ending March 31, indicate that the profits generally will be satisfactory.

North Eastern Region Road Safety Campaign.—A silver cup, given by the Company of Veteran Motorists to the North Eastern Region of British Railways, for annual competition between the districts of the Region in connection with the Safety on the Roads Campaign, has been won for the year 1957 by the Middlesbrough Commercial District. At a recent ceremony in the Regional headquarers at York, Mr. W. H. Vine, Commercial Officer, North Eastern Region, presented the cup to Mr. D. S. Lewis, District Commercial Superintendent, Middlesbrough. The trophy is awarded to the district showing the highest percentage improvement in the number of blameworthy accidents per vehicle working day. Presenting the cup, Mr. Vine said that in



Double-sided vitreous enamel sign; illumination is by fluorescent reflector tubes

the North Eastern Region there were 1,597 vehicle drivers, of whom 1,355 had entered the National Safe Driving Competition.

Switchgear & Cowans Limited Results.—The dividend of Switchgear & Cowans Limited, electrical engineers, for 1957 is cut to 22½ per cent from 25 per cent for 1956, with a final payment of 15 per cent. Group trading profits were £212,669 against £222,520, and net profits were £46,754 compared with £54,604.

Instruments, Electronics & Automation Exhibition and Firth Cleveland Instruments.—Firth Cleveland Instruments Limited, of Treforest, Glamorgan, will show a wide range of its field handling instruments, valves, nuts and clips at the forthcoming Instruments, Electronics & Automation Exhibition at Olympia, London, from April 16 to 25. These will include a float-operated direct reading gauge, hydrostatic and hydraulic gauges. Other products will be a liquid level controller which incorporates a pressure-operated switch and Nyloc self-locking nuts.

British Railways Customer Survey.—The London Midland, Eastern, North Eastern, and Scottish Regions of British Railways are undertaking another customer survey, in which passengers by certain trains between Manchester and Glasgow, Birmingham and Glasgow, the West Riding, including Sheffield and Glasgow and Edinburgh are being invited to make suggestions in regard to the various train services. The purpose is to find whether the present services meet the needs of businessmen and other regular travellers. Passengers are being asked to indicate the approximate number of journeys they undertake each year, whether any of the present trains are not convenient and, if additional trains are thought to be required, to state approximate convenient times. Questions are also being posed with a view to obtaining some measure of the potentional passenger traffic if additional services could be arranged.

Forthcoming Meetings

March 28 (*Fri.*).—Institution of Locomotive Engineers. Visit to the works of Westinghouse Brake & Signalling Co. Ltd., Chippenham. Members leave Paddington Station by 11.5 a.m. train.

March 28 (*Fri.*).—Institution of Mechanical Engineers, at 1, Birdcage Walk, Westminster, S.W.1, at 5 p.m. Internal Combustion Engine Group: Discussion: "The ultimate engine: stationary, rail traction and marine.

March 29 (*Sat.*).—Permanent Way Institution, East Anglia Section, at Ipswich, at 2.15 p.m. Paper on "Ordnance surveys," illustrated by lantern slides, by Major P. C. Sherwood.

March 31 (*Mon.*).—Historical Model Railway Society, at the Railway Tavern, Liverpool Street, London, E.C.2, at 7 p.m. Paper on "The Tralee & Dingle Light Railway," by Mr. P. B. Whitehouse.

March 31 (*Mon.*).—Society of Engineers, in the Apartments of the Geological Society, Burlington House, London, W.1, at 5.30 p.m. Paper on "Soil in British railway civil engineering," by Mr. A. H. Toms.

March 31 (*Mon.*).—Institute of Transport, Darlington Group, at United House, Grange Road, Darlington, at 7 p.m. Paper on "Some misconceptions of British Railways," by Mr. K. A. Kindon.

April 1 (*Tue.*).—Permanent Way Institution, Leeds & Bradford Section, in the British Railways Social & Recreation Club, Ellis Court, Leeds City Station, at 7 p.m. Paper on "Pre-electrification work on Stratford District," by Mr. P. B. Davis, British Railways, Eastern Region.

April 1 (*Tue.*).—Railway Correspondence & Travel Society, Sheffield Branch, at Livesey Clegg House, 44, Union Street, Sheffield, at 7.30 p.m. Paper on "Recent footplate experiences on the branches of the Irish Great Northern Railway," by Mr. J. C. W. Halliday.

April 2 (*Wed.*).—Electric Railway Society, at the Fred Tallant Hall, 153, Drummond Street, London, N.W.1, at 7.15 p.m. Paper on "Some Swiss main line scenes," by Mr. B. J. Prigmore.

April 2 (*Wed.*).—Institute of Transport, North Ireland Section, at Belfast Castle, Belfast, at 7 p.m. Annual dinner and visit of Major-General G. N. Russell.

April 8 (*Tue.*) to April 12 (*Sat.*).—Model Railway Exhibition, at the Central Hall, Westminster, S.W.1.

April 11 (*Fri.*).—The Railway Club, at 320, High Holborn, London, W.C.1, at 7 p.m. Paper on "The L.S.W.R. Story II—A cold welcome in Portsmouth," by Mr. K. G. Carr.

April 11 (*Fri.*).—Railway Correspondence & Travel Society, London Branch, at the Railway Clearing House, Eversholt Street, London, N.W.1, at 7.30 p.m. Paper on "Narrow gauge wanderings in Europe," by Messrs. G. W. Morant and H. Cuff.

Railway Stock Market

Although the reduction in the bank rate from 7 to 6 per cent exceeded the ½ per cent decrease which was the general expectation in the City, boom-like conditions did not develop in stock markets. The response was much smaller than might have been anticipated, though British Funds, as is usual with fixed-interest securities when the bank rate is cut, recorded a good rise. The undertone of hesitancy is still due to a tendency to go cautiously until there are definite signs that the American trade recession has been halted. On the other hand, since the bank rate cut, hopes have been growing in the City that the Budget will help industry by changes in profits tax and some other concessions. The general belief is that big changes are unlikely at this stage, but if the Chancellor of the Exchequer were to find a way of making major tax cuts, there is no doubt stock markets would show a big response.

Canadian Pacifics, in common with dollar stocks generally, have naturally moved pretty closely with Wall Street, but despite fluctuations, were only fractionally lower on balance at $46. The 4 per cent debentures at 65¼ and 4 per cent preference stock at 54 were both firmer. White Pass shares changed hands around $14.

In other directions, buyers were a little more in evidence for Antofagasta ordinary stock, which rallied a point to 16 with the preference stock slightly higher at 35½. United of Havana second income stock was again 6, Mexican Central "A" bearer debentures changed hands around 69, and in other directions, San Paulo Railway units were again around 2s. 1½d.

Costa Rica ordinary stock remained at 17 and Chilean Central 5 per cent debentures kept at 35. Guayaquil & Quito assented bonds were quoted at 72½ and International of Central America shares at $22½.

Elsewhere, Nyasaland Railways shares at 9s. 9d. and the 3½ per cent debentures at 60½ have been well maintained.

A feature among shares of locomotive builders and allied companies has been an advance from 27s. 6d. to 30s. in G. D. Peters following the excellent results. The raising of the dividend from 7½ per cent to 10 per cent and the proposed one-for-three scrip issue exceeded expectations; profits have advanced to £124,988, compared with the previous year's £79,391. Buyers were again about for North British Locomotive on the view that the shares are moderately valued from the long-term aspect; they have improved further to 13s. 1½d. compared with 11s. 7½d. a week ago. Charles Roberts 5s. shares at 8s. 4½d. were the same as a week ago, while awaiting the outcome of the bid from the last-named company, Hurst Nelson at 34s. 9d. were virtually the same as a week ago. Birmingham Wagon firmed up to 17s. on the maintained 10 per cent dividend.

Beyer Peacock 5s. shares strengthened from 7s. 4½d. to 7s. 7½d. and in other directions Westinghouse Brake have been firm at 36s. 6d. Associated Electrical rose from 49s. 9d. to 51s. 3d. awaiting the speech of Lord Chandos at the annual meeting. General Electric with a rise from 30s. a week ago to 31s. 9d. and English Electric, up from 50s. to 52s. 3d., also moved in favour of holders.

T. W. Ward continued in favour and rose further from 74s. to 75s. 6d.; Butterley 2s. 6d. shares were 13s. 3d.; British Oxygen rose from 33s. 3d. to 34s. 9d.; and while Ruston & Hornsby were again in favour, rising further to 26s. British Timken at 46s. 9d. were well maintained. Awaiting the results, Pressed Steel 5s. shares rose afresh from 13s. 10½d. to 14s. 4½d. Vokes 4s. shares were 14s. 3d. and British Aluminium strengthened to 47s. 3d.